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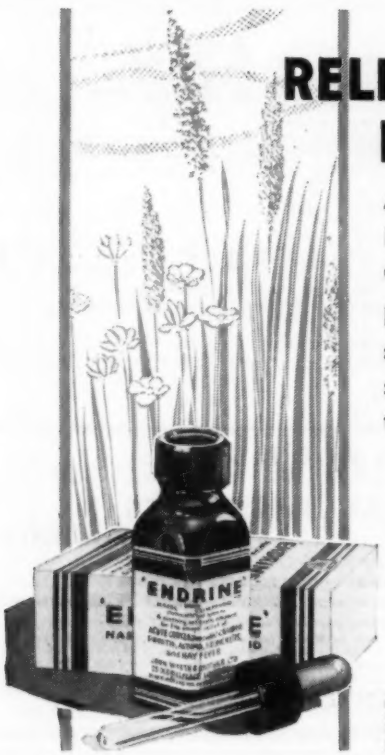

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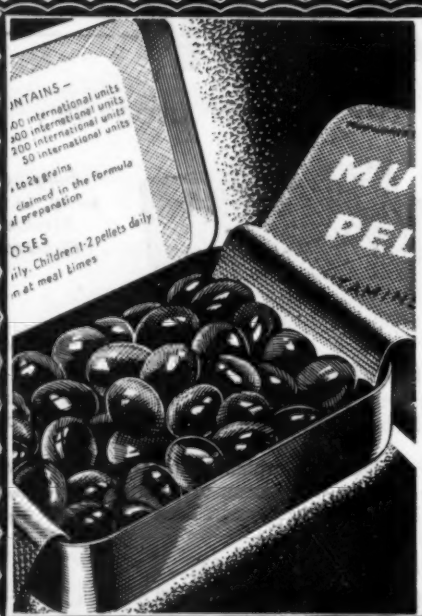

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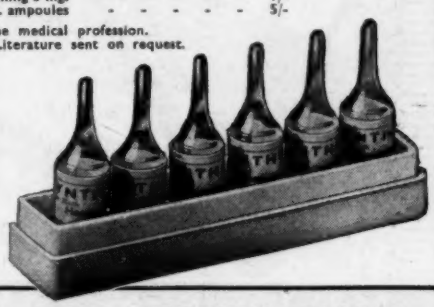

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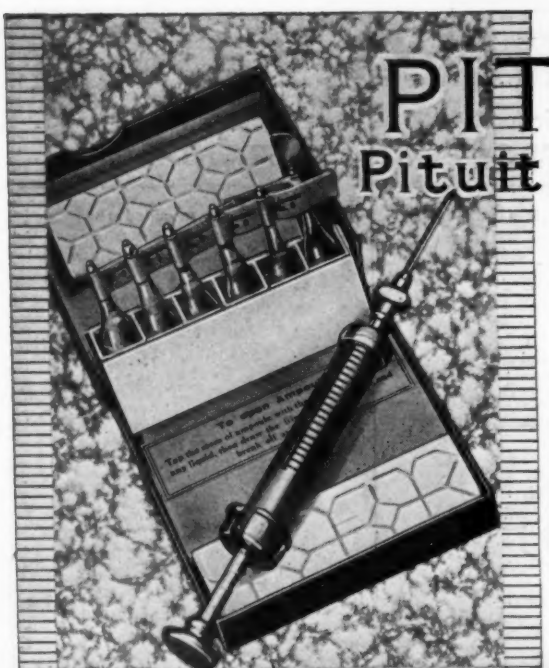

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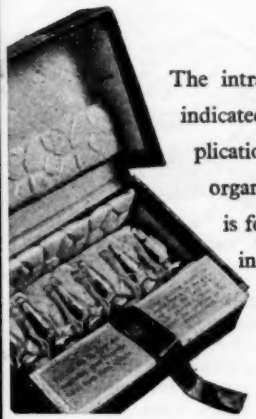

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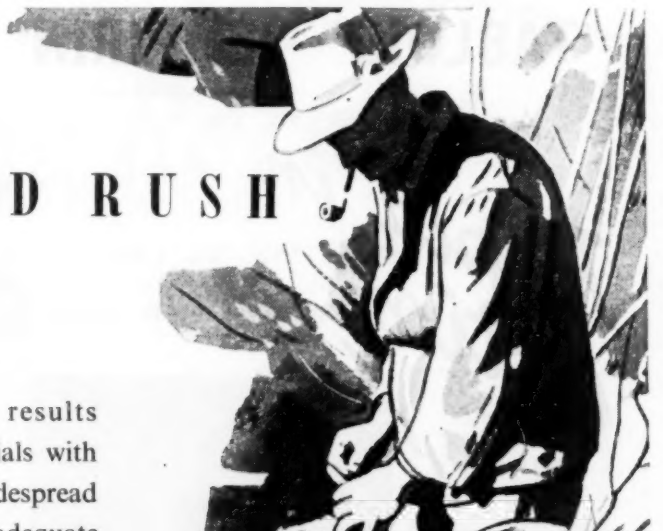

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ORIGINAL ARTICLES

FACIAL PARALYSIS AND ITS OPERATIVE TREATMENT *

By JOSEPHINE COLLIER, B.M. Oxfd, F.R.C.S.
ASSISTANT SURGEON, EAR, NOSE AND THROAT DEPARTMENT, ROYAL FREE HOSPITAL; SURGEON IN CHARGE, EAR, NOSE AND THROAT DEPARTMENT, SOUTH LONDON HOSPITAL FOR WOMEN

THE lectures which the late Dr. Arthur Duel, of New York, delivered in 1934 at the Royal College of Surgeons on the operative treatment of facial paralysis have stimulated interest in the theory and practice of nerve grafting, a procedure that had hitherto produced disappointing results. The report on the remote results of operation for injuries of the peripheral nerves due to gunshot wounds during the last war (Platt and Bristow 1924) had established the attitude of British and American surgeons towards the value of nerve grafting as sceptical, if not wholly condemnatory, while the results of end-to-end suture, the operation of choice in any division of a peripheral nerve, were found to be adversely affected by sepsis in the wound, which leads to fibrosis both in the surrounding tissue and in the interstitial tissue of the nerve. Why then was nerve grafting successful in the temporal bone, even when acute or chronic bone disease was present?

DAMAGE TO THE FACIAL NERVE IN THE MASTOID OPERATION

Since Duel's lectures were given, I have treated 81 patients with facial paralysis, of whom only 18, in addition to 7 with chronic suppurative otitis media, were suitable for operation. As a preparation for this work I made over 50 exposures of the facial nerve in the post-mortem room, and studied the abnormalities of the facial canal in the Cheatle and Toynbee collections at the Royal College of Surgeons, and this experience, together with the findings at operation in 15 patients who had suffered previous injury to the facial nerve, has enabled me to assess the anatomical factors responsible for this damage during the mastoid operation and to consider how best it can be avoided.

The facial nerve in its tympanic course is protected only by a thin paper-like lamina of bone, which may be absent, leaving only mucosa between the nerve and the middle ear. From the external semicircular canal to the stylomastoid foramen the nerve has anatomical peculiarities which distinguish it from all other nerves and are responsible for its vulnerability both to surgical hazard and to pathological processes which in other nerves produce only transitory and negligible results. In this course the nerve lies in a bony canal which it completely fills and to which its sheath is firmly attached. For these reasons vascular changes, the response to the stimulus of inflammation or of trauma, immediately lead to pressure on the nerve; and, if the nerve is much or long compressed, conduction of the nervous impulse is lost. This anatomical peculiarity has one compensation: it facilitates perfect end-to-end apposition of a graft laid in the facial canal and so favours restoration of function.

Surgical damage to the exposed facial nerve in infants and young children, due to absence of the mastoid process, should not happen if it is remembered that the relatively large mastoid antrum in young people is situated above as well as behind the middle ear. Normally development of the mastoid process should have proceeded sufficiently to carry the stylomastoid foramen to the under surface of the temporal bone by the age of two years, but in some small light skulls the nerve is not adequately protected until the third year.

In some temporal bones a forward placed lateral sinus, generally associated with a middle fossa that dips down to Macewen's triangle, allows only a restricted area for exposing the high-lying deep mastoid antrum with which it is associated. The difficult approach to the antrum in such cases seems to be a definite factor leading to damage of the facial nerve. In 4 of my operations for surgical injury from a cortical operation the posterior meatal wall had been partially removed in avoiding the lateral sinus, which was close up against the bony meatus; 3 other patients had loss of substance of the facial nerve after a cortical operation in a normal bone, and in these also the bony posterior meatal wall had been encroached on to various extents. These observations, besides experiments in the post-mortem room, have convinced me that respect for the integrity of the bony external auditory meatus is the best safeguard for the surgeon who is not accustomed to aural surgery but is occasionally called on to perform the cortical operation for acute mastoiditis. The facial nerve may be exposed to damage when the chain of cells behind the external meatus is being cleared, particularly when the cells undermine the wall and open into the canal. In one operation I found that, in clearing the cells impinging on the facial canal, the operator had removed the sheath of the nerve for about 6 mm. Too low an approach to the antrum may be responsible for damage, and in 3 of my series a hole had been made in the canal 4–6 mm. below the antrum, which had not been opened, because the bent probe inserted into a mastoid cell below the level of the antrum had given the operator the erroneous impression that he had entered the aditus.

Textbooks of surgery, describing the radical mastoid operation, usually say that injury to the facial nerve may be done during removal of the "bridge" of the postero-superior wall of the bony meatus. The nerve may be exposed to trauma at the bend below the external semicircular canal, particularly since the nerve often bows outwards here, but in none of my cases had the injury been done in a properly performed radical operation. Probably the transitory palsy that sometimes follows a radical operation, when the muscles never lose their faradic excitability, is due to bruising and œdema (with an intact sheath) at this site, a mild traumatism that does not produce sufficient compression to initiate wallerian degeneration. The tympanic course of the nerve, with its covering of thin bone, sometimes deficient, seems a more vulnerable area. Here, damage may be done in removing granulations from the inner wall of the middle ear; it can be guarded against by careful hæmostasis of the operation field by hot saline and suction or an adrenaline pack and by avoiding the use of a curette or other sharp instrument. I have, however, never seen injury isolated in the middle ear.

SURGICAL TREATMENT OF FACIAL PARALYSIS

The treatment of injuries to peripheral nerves in any part of the body depends on the type of injury and the anatomical completeness of the division. If the accident has been such as is likely to interfere with the continuity of the nerve, and if the clinical examination shows total loss of function in the parts supplied, the correct surgical treatment is exploration. This surgical principle was not applied to the facial nerve in the temporal bone until the publication of the work of Ballance and Duel (1934), and even now many surgeons prefer to wait, trusting to the effects of massage and electrical treatment and hoping that the injury was incomplete and due merely to inflammatory irritation of the nerve. In giving a prognosis reliance was placed on the interval after the operation when the facial palsy was observed. Paralysis appearing one or two days after the operation cannot be caused by a total loss of continuity. In this series there are 7 patients with weakness of the facial movements appearing after the first day who recovered within four or five weeks. But the patient with complete facial palsy, even if not observed until several hours after the operation, is in a different category. What criterion must the surgeon adopt to form a prognosis to guide his treatment? The injury may be due to simple œdema or to hæmorrhage with an intact sheath, to a torn sheath, to compression by detached bone, or to section of the nerve with loss of nerve substance. I have found all these conditions. History is not very helpful; the observation by the anæsthetist that the face twitched while the surgeon was working in a dangerous area may

* Part of a Hunterian lecture delivered at the Royal College of Surgeons on June 2, 1939. The section dealing with Bell's palsy is being published separately.

indicate bruising or section; if the surgeon reports damage to the exposed nerve, that is valuable positive evidence. Negative reports are not conclusive, particularly after an operation for acute mastoiditis.

The only test that gives information about the anatomical and physiological condition of a motor nerve in the presence of paralysis is the faradic stimulus. If the facial muscles respond to a faradic current without an anæsthetic, the prognosis is good. One would surmise that localised œdema had produced a physiological nerve block. At one time I considered that the absence of a faradic response suggested an anatomical interference with conduction, either by compression or by section, in each case producing wallerian degeneration; but repetition of the test under general anæsthesia has often produced a response which could not be obtained in a conscious patient. Every patient in my series who had given a positive response to faradism, with or without an anæsthetic, recovered facial movements more or less completely. I have seen several patients, at various lengthy periods after surgical injury to the facial nerve, in whom some recovery has taken place, in spite of the report of a negative faradic response shortly after the injury; but in all these the recovery has been long delayed and very imperfect, and facial synkinesia has been prominent.

I have operated on 15 patients with a negative response and have found injury to the nerve in each case. Injuries of the facial nerve, without loss of continuity of nerve substance, differ from injuries to peripheral nerves in the limbs, because the nerve is contained in a canal which does not allow of reactionary swelling, with the result that, if the nerve is damaged but not severed, regeneration cannot take place satisfactorily; whereas in a peripheral nerve, if the sheath is intact and the compressive force removed, all the factors favouring regeneration are present: the nerve tissue is insulated by the uninterrupted sheath, which prevents the proximal axons from escaping and ensures their conduction to the neurilemma below. Such injuries of the facial nerve without discontinuity are treated by decompression from the stylomastoid foramen upwards until normal nerve is reached.

I have never found a simple section of the nerve of the kind postulated in otological textbooks as a result of a slipped gouge or chisel; therefore the firm attachment of the nerve-sheath to the periosteum, which would prevent retraction of the cut ends and maintain approximation, allowing the regenerating axons from the proximal end to reach the distal end of the divided nerve, is not a factor for consideration. I have found the nerve divided in 11 patients, and in each of these there has been loss of 5 mm.–20 mm. of nerve substance. When exploration has been undertaken several weeks or months after the injury, the ends are found embedded in scar tissue; hence the gap may be longer.

NERVE GRAFTING IN THE TEMPORAL BONE

It is an established surgical principle that the only effective treatment of divided nerves in the limbs is end-to-end suture. If this is not practicable immediately, because of associated fractures or of infection of the wound, secondary suture is indicated. When there is loss of nerve substance, either from the original injury or from the secondary fibrosis which necessitates sacrificing various lengths of the nerve, approximation of the cut ends can be assisted by appropriate manœuvres: mobilisation of the nerve trunk above and below the point of section, transposition of the nerve to a new course, or gradual traction by a two-stage operation. These methods have a limited applicability to the facial nerve. Direct end-to-end suture can only be attained by transposition of the nerve. This method has been used by Bunnell (1937) and Martin (1936) in the United States. The technical difficulties of the operation are great; the mobilisation of the nerve above and below the site of the section necessary for this transposition disturbs the vascular supply of the sheath—a consideration more weighty in the avascular temporal bone than in the limbs—and complete destruction of the middle ear is inevitable.

The chief criticism of the graft operation is that it entails the destruction of the middle-ear structures and consequent deafness. My observations at operation have, however, taught me that every patient requiring a graft to replace damaged nerve in the middle ear has already suffered interference with the integrity of the middle ear, and that patients whose nerve has been injured in the vertical portion can be treated by decompression or by a graft without destroying the middle ear. Each of these patients (e.g. fig. 1) has been left with a healed tympanic membrane and normal hearing.

The work of Bentley and Hill (1936) suggests that the bad functional results that followed grafting of the limb nerves during the war 1914–18 were due to the scar tissue that must have formed at the sites of the anastomoses, particularly when cable grafts were employed. Extensive fibrosis at the suture line acts as a definite barrier to the passage of axons across the graft from the proximal to the distal end of the nerve. Minimal formation of scar tissue is obtained by accurate approximation of nerve and graft; therefore a graft equal in calibre to the recipient must be used. It is necessary to examine the special features in the temporal bone which facilitate the growth of nerve-fibres across the graft. The facial canal offers a rigid channel in which the graft can be placed, accurately apposed end to end to the divided nerve. The fixed ends of the nerve can be cut at right angles to their long axis and can be approximated perfectly, particularly with the firm and stiff degenerated nerve. The graft from the middle cutaneous nerve of the thigh, if taken as high as possible, is approximately equal in calibre to the facial nerve in the facial canal. There is no possibility of the graft's shifting in the bony channel after the operation, particularly if the slit sheath can be laid up against the graft; such a shift may easily take place in the limbs after suture, where, even with the limb encased in plaster, some movements are inevitable. The graft is necessarily short—the total length of the facial canal from the genicular ganglion to the stylomastoid foramen does not exceed 28 mm.—hence the new axons have time to reach the distal junction of graft and nerve before a dense scar, which would obstruct their passage, has time to form.

I think, however, that the chief value of the rigid bony bed of the facial canal in minimising scar formation is due to the fact that it does away with the necessity for sutures. No matter how carefully these are inserted in the sheath of the nerve and graft, scar tissue inevitably forms about the foreign body. This foreign-body factor is absent in facial-nerve grafting, where the graft can be securely tucked in between the freshly excised ends of the nerve without stretching and without the interposition of blood-clot. The possibility of grafting without sutures is particularly important in the temporal bone, where the presence of infection in the middle ear and mastoid process cannot be excluded, and the coincidence of sepsis and sutures would inevitably increase the formation of fibrous tissue.

(a) (b) (c)

FIG. 1—Complete left facial paralysis which came on immediately after a cortical mastoid operation; no faradic response three weeks later; posterior meatal wall had been partly removed, facial canal fractured, and nerve-sheath torn for 6 mm.: (*a*) before decompression of facial nerve; (*b* and *c*) two years after decompression: (*b*) smiling; (*c*) face in repose.

This exposition of the factors favouring successful grafting in the facial canal is confirmed by my operations. I have had 6 complete failures in my graft operations, where no return of facial movement or faradic response has taken place after two or three years. In 3 of these the surgical injury at the original operation had destroyed the canal; hence there was no rigid bony bed in which to lay the graft, and I feel sure that accurate contact between the graft and the nerve was not maintained.

(a) (b) (c)

FIG. 3—Complete left facial paralysis; no faradic response three months after radical mastoid operation: (a) before graft operation; (b) smiling, six months after 14 mm. of degenerated nerve had been inserted in the facial canal to make good a loss of about 10 mm. of nerve; (c) six months after graft operation, face in repose.

INDICATIONS FOR OPERATION IN FACIAL PARALYSIS

The factors to be considered in every case of post-operative facial paralysis are the time of onset of the palsy, the electrical reactions of the facial muscles, and the condition of the middle ear. Appearance of paralysis immediately after operation indicates complete interference with the continuity of the nerve and calls for operation as soon as the general condition of the patient permits. The shorter the time the facial muscles are denervated, the more perfect will be the results, with minimal tendency to mass movements and contractures.

If the facial movements have been observed after the operation and weakness is seen to develop one or more days later, it is safe and wise to wait; and, if a week or ten days later the electrical reactions are normal, one can be confident that the muscles have not been denervated, and that recovery will take place without interference. Here the damage must have been slight and the resultant œdema insufficient to prevent conductivity. But, if the reaction of degeneration is present ten days after onset, we know that conductivity has been lost owing either to severe compression or to section and loss of substance of the nerve; and, if the appropriate treatment is not given, recovery may never take place or, if it does, in the compressed cases it will be slow, incomplete, and associated with excessive synkinesia.

(a) (b) (c)

FIG. 2—Complete left facial paralysis; no faradic response five months after mastoid operation: (a) before graft operation; (b) smiling four years after graft operation, at which 20 mm. of degenerated nerve was inserted in the facial canal to make good a loss of about 12 mm. of nerve; (c) five years after graft operation, face in repose.

The indications for operating in the late cases—i.e., those seen several months or even years after injury—are less dogmatic. Duel (1936) maintained that operation should always be undertaken in any case where there was "galvanic response in the muscles sufficient to show that the muscles have not undergone too much fibrous atrophy." It is obvious that movement cannot be restored to fibrosed muscles; hence loss of galvanic response is an absolute contra-indication to any operation on the nerve. But the decision is more difficult when, although the nutrition of the muscles has been maintained by physiotherapy, the lapse of time since the injury makes it likely that degeneration has taken place in the cells of the facial muscles. Ballance (1934) has demonstrated the regressive changes that take place in the pontine nucleus and in the facial area of the rolandic cortex after removal of the facial nerve, and we know that, when there is no regeneration of nerve-fibres, the cells ultimately disappear. What we do not know is how long it takes for these changes to become irreversible. It is possible, but without post-mortem evidence we can have no exact information, that degenerative changes in the nuclear cells proceed pari passu with fibrotic changes in the muscles. Up to now the problem has only been academic for me, because every patient of mine whose facial paralysis has persisted for more than three years has given a negative response to the galvanic test; hence the question of nerve grafting did not arise.

Exploration is the only means of determining the site and the extent of the injury; if this is done from below at the stylomastoid foramen, the damage, if found in the descending portion of the nerve, can be repaired here by decompression or graft without damaging the tympanic membrane or the middle ear. If the injury is proximal to, or involves, the bend below the external canal, it will be necessary to expose the horizontal or middle-ear part of the nerve by the radical mastoid operation. In each of my 8 patients where this has been necessary the tympanic membrane and the middle ear had already been damaged by disease or by operation.

ANATOMICAL PROBLEMS IN OPERATIONS ON THE FACIAL NERVE

For the success of the grafting operation the anatomical findings must be favourable; 3 of my failures have taught me that a channel or bony bed like that of the facial canal must be present or must be supplied by the surgeon. There must be a central end to which the graft can be apposed. This was absent in 2 of my patients: in one the removal of a sequestrum of the labyrinth, which must have involved most of the inner ear and internal auditory canal, at a previous operation had left exposed dura mater of the middle and posterior fossæ. The central end of the nerve could not be found, and the graft operation had to be abandoned. In the other the genicular ganglion had disappeared; and, though I laid the graft carefully against the inner wall of the middle ear at the site of the ganglion, no recovery took place. Except in young children, the peripheral end of the divided nerve is generally in the lower end of the facial canal and can easily be approximated to the distal end of the graft. I have, however, found the peripheral end outside the stylomastoid foramen on two occasions. In these cases it is necessary to suture the distal end of the graft to the cut end of the facial nerve, a technique that, in my belief and experience, depreciates the quality of the result.

There are certain anatomical difficulties in operating on the facial nerve. The most troublesome is hæmorrhage from the superior petrosal and the stylomastoid arteries in the facial canal. Hot saline solution, suction, and pressure are used to stop this, though there is danger of dislocating the stapes when working in the tympanic cavity, and suction should be avoided when the

graft is in the wound. I have tried infiltrating the region of the stylomastoid foramen with a 1% solution of procaine to constrict the stylomastoid vessels before opening the canal in this region and have found the hæmorrhage less troublesome. A dry field is essential for accurate end-to-end apposition of the nerve graft. The attachment of the sheath of the nerve to the periosteum of the bony canal, especially firm at the stylomastoid foramen, must be remembered, to avoid tearing the nerve while uncovering it for decompression. Small fragments of bone often adhere to the periosteum, and this to the sheath, and must be removed with the utmost gentleness. The nerve may be damaged peripherally to the stylomastoid foramen in detaching the posterior belly of the digastric muscle from its groove. This happened two or three times when I was working in the post-mortem room, and I found that it was best avoided by careful subperiosteal separation of the muscle deep to the mastoid tip, where the nerve is easily recognised as it turns forwards over the styloid process.

VALUE OF PREPARED NERVE GRAFT

Ballance and Duel's (1934) advocacy of the degenerated graft is now somewhat discredited by the investigations of Bentley and Hill (1936), who have suggested that the clinical superiority of the prepared graft may be due to the fact that being firm and stiff it is more accurately approximated to the recipient nerve, with the result that scar tissue is minimised. My experience of degenerated nerves at operation, compared with fresh nerves in the post-mortem room, confirms this explanation. The soft fresh nerve is more easily crushed and is with difficulty secured without sutures against the cut ends of the facial nerve. The degenerated graft can be cut squarely at right angles to its length, which favours accurate apposition; this is difficult in the fresh graft, even with the sharpest of Graefe knives. Moreover the degenerated nerve is swollen and larger; hence it has a cross-section comparable to that of the facial nerve which fact facilitates approximation.

LIMITATIONS OF OPERATIONS ON THE FACIAL NERVE

In his last paper Duel (1936) said that no case of repair of the facial nerve could ever be perfect—an acknowledgement that the earlier claims had been perhaps too enthusiastic. I have dealt earlier with the factors that determine the success or failure of an operation on the facial nerve. I want now to discuss the standard of functional recovery that can be expected after a successful operation—i.e., one in which the nerve conducts impulses to the facial muscles across a segment where wallerian degeneration has previously taken place, when the continuity has been restored by decompression or a nerve graft. The return of conductivity is shown by the appearance of tone in the paralysed muscles. The first indication of improved muscle tone is cessation of epiphora; then voluntary power returns slowly to all the muscles, including the orbicularis palpebrarum but not the frontalis, in which I have never seen recovery. American workers confirm this failure after the graft operation; but recovery may follow decompression. Emotional movements accompany the return of voluntary power and are synchronous with those of the opposite side to various degrees. I have seen progressive recovery up to five years, at which date the degree of restoration can be estimated. More or less perfect symmetry at rest is possible (figs. 1*c*, 2*c*, and 3*c*). There is, however, always some asymmetry on movement (figs. 2*b* and 3*b*) after every graft operation, but not after decompression, where recovery is greater (fig. 1*b*). I think that the age of the patient may be a factor here. My youngest patient was 11. Some of Duel's patients were less than a year old, when presumably cortical control can more easily be exerted along new paths. The quality of the result will be influenced by the condition of the muscles. Probably there is always some fibrosis in any muscle that has been denervated for several months. If fibrosis is present in part of the muscle, it will interfere with complete restoration of movement, even if the nerve-supply is restored to the muscle as a whole. This fibrosis may be responsible for failure of innervation of the frontalis muscle. I have often found no galvanic response in this muscle before operation when the rest of the face responded well.

After suture of the limb nerves, particularly if any portion of the nerve trunk has been lost, or if rotation has taken place in the approximated ends, there is likely to be a shunting of nerve-fibres to inappropriate receptors. This confusion of axons in the peripheral distribution interferes especially with the execution of the fine movements of the small muscles of the hand. In the face this phenomenon may be manifested by mass movements or synkinesia, an involuntary contraction of the whole face or side of the face on attempting an isolated movement, an inability to close the eyes without screwing up the mouth. These limitations in cosmetic recovery after operation may be modified by various factors, such as the patient's age, the time that has elapsed between the original injury or disease and the operation, and the postoperative treatment. The longer the paralysis has persisted, the more will synkinesia and asymmetry mar the recovery; hence the importance of precise indications for early operation. Only once have I had the opportunity of doing a graft operation as early as three months after the injury, and most of my patients have been treated at seven to fourteen months after injury.

The presence of facial tics or isolated purposeless movements has been noted at different stages of recovery in most of my patients, but they have never developed to a degree that disturbed the patient or marred the æsthetic result. Isolated dimples (figs. 2*b* and 3*c*) are a manifestation of the same phenomenon and, like the associated movements, may be due to splitting of the axon at the site of regeneration (Howe, Tower, and Duel 1937).

During the postoperative period the facial muscles must be supported by internal or by external splinting to prevent over-stretching. The nutrition of the muscles is maintained by physiotherapy, particularly heat. Massage must be directed to prevent elongation of the muscles. As soon as there is minimal return of active movement, careful re-education before a mirror, with relaxation of the sound side of the face, is the best safeguard against the development of associated movements. Here the coöperation of patient and masseuse is most important. Movements and not muscles are represented in the cortex, and voluntary control of movements can be learnt. I think that the training of individual movements is facilitated by avoiding the ordinary galvanic current, which can only stimulate isolated muscles and favours the development of tics and contractures.

CONCLUSION

In assessing the results of treatment of facial paralysis, the psychological as well as the æsthetic or cosmetic recovery must be considered. Even slight recovery of emotional movements has value in relieving the patient from a morbid self-consciousness and is sufficient justification for attempting repair in suitable cases. Surgical injury may have produced loss of nerve substance, and this can be determined only by exploration. Early treatment is essential because the quality of the result depends directly on how long the muscles have been denervated.

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"... It is a great mistake to keep on talking about *accessory foods* as though they are a kind of extra, like music or callisthenics at a finishing school for young ladies. They are just as important as the big three. No protein: death! No iron: death, death by slow torture! No vitamins: 'Sans teeth, sans eyes, sans taste, sans everything.'"—Sir Frederick Keeble at a weekly evening meeting of the Royal Institution of Great Britain.

CHRONIC NEUROTICS AND THE OUTBREAK OF WAR

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IN preparing for the war, those who had to provide accommodation for expected cases of neurosis among civilians had no figures from which to estimate the probable numbers. This was partly due to the fact that the type and extent of enemy action anticipated had no real precedents in history. The nearest parallels, however—namely, the experiences during the Spanish civil war, particularly the air-raids on Barcelona; Hoche's observations in Friburg during air-raids in 1917; and some observations during earthquakes—all pointed to a surprisingly high resistance and adaptability of the civilian population to disturbing conditions.

The admissions to mental hospitals and the various responses of mental-hospital patients after earthquakes have been studied by some psychiatrists, and relatively few grossly pathological reactions have been found. This is not surprising so far as psychotics are concerned; psychopaths and chronic neurotics, on the other hand, appear to be more likely than the average population to react in a pathological manner to acute danger. Indeed, it seems not unreasonable to assume that constitutionally abnormal people would form the majority of those who, in situations of acute danger, would need psychiatry. Although the present war has not so far produced any acute emergency in which the response of various civilian groups could be definitely ascertained, the outbreak of war and the early air-raid warnings, though obviously less drastic than bombardment or invasion, did provide a definite psychological stimulus which produced some acute panic reactions in the civilian population. It is known, for example, that there were such admissions to the London observation wards during the early days of the war. One method of research would be to assess the previous history and reaction of a large sample of these patients. An alternative method is to study the reactions of known chronic neurotics to the outbreak of war—the method used in this investigation.

The material was obtained by clinical observation of a group of chronic patients who had regularly attended psychiatric outpatient clinics for at least a year before September, 1939. Since the work of the clinics concerned was not interrupted at the outbreak of war, there was ample opportunity for observing and noting the various characteristic reactions. The accuracy of such an investigation is necessarily limited for the following reasons:—

(1) The outbreak of war is obviously a psychological stimulus containing a multitude of factors of very different psychological value, such as the broadcast news, evacuation, calling-up, and blackout. We tried, however, to concentrate on the patients' reactions to the acute onset, before their individual worries had crystallised out. The number of patients justifies disregard of the individual differences to some extent.

(2) A second source of error, which we tried to eliminate as far as possible, is that we had less opportunity of directly observing those patients who reacted by clinical improvement to the stimulus of war. These patients usually ceased to attend during this period, and the reports on them tend to be more retrospective and necessarily include factors appearing somewhat later than those concerned in the assessment of patients seen during the early days of the war.

(3) Some of the patients assumed that these clinics, like so many other London hospitals, were not open during the early days of the war; their descriptions of their reactions are therefore necessarily retrospective. It must be pointed out, however, that it is extremely unlikely that any of these patients underestimated the adverse effects of the outbreak of war; hence any error in this direction is more likely to have increased our figures of adverse effects.

* Working with a grant from the Rockefeller Foundation.

INVESTIGATION AND RESULTS

The clinical material for this investigation was obtained from the psychiatric clinics run by the Maudsley Hospital at Mile End and St. Mary (Islington) L.C.C. Hospitals. The case-records of all patients attending both clinics were examined, and those who had been attending for a year or more at the outbreak of war were selected for investigation. Most of these patients had been attending for more than two years. This method of selection made certain that all the patients investigated could be definitely classified as chronic. Of the 103 cases thus selected more than half were under our constant observation, and their response, subjective and objective, to the war was ascertained during their routine attendances; the other patients were interviewed either by the social worker or by the physician in charge. About 30 ceased to attend at the outbreak of war; of these all but 13 had been seen by March 1, 1940. A letter of inquiry was sent to these 13; 6 replied, either by letter or by attendance. The whereabouts of 7 patients is so far unknown.

The results are summarised in table I, in which the patients have been classified according to both their original diagnosis and their reaction to the outbreak of war.

TABLE I—REACTIONS OF CHRONIC NEUROTICS TO OUTBREAK OF WAR

Reaction	Anxiety	Hysteria	Obsession	Hypochondria	Depression	Miscellaneous	Total
Improved ..	6	3	1	1	4	2	17
Not affected ..	5	10	8	15	10	8	56
Worse ..	6	3	0	2	9	3	23
Total ..	17	16	9	18	23	13	96

The classification according to original diagnosis has been made partly by a careful scrutiny of the patients' case-records and partly through our previous personal knowledge of the patients. The inclusion of a miscellaneous group is due partly to inadequate information and partly to the unavoidable presence of possible epileptics and possible postencephalitic cases in any group of chronic neurotics. The hysterical group includes in the main hysterical personalities rather than patients with typical conversion hysteria. The distinction between chronic anxiety and mild depression has often appeared rather arbitrary in the assessment of a case-record covering many years during which the clinical picture has shown much fluctuation. It nevertheless appeared important to group together all those cases in which anxiety had been conspicuous before the war. Cases of gross psychosis have been excluded from this study; the records suggest, however, that in a few cases a neurosis may have been superimposed on a mild schizophrenia or schizophrenic defect.

Difficulties have arisen in classifying the patients according to their reaction to the outbreak of war. In each group there is a nucleus in which the classification has been straightforward; these were the patients who attended during the first fortnight of the war and had a routine note made about their immediate reaction. In these cases it was always clear whether the symptoms had increased, improved, or continued the same as usual, with little or no direct reference to the war. Some of these patients could not miss the opportunity for complaint in connexion with the war, although it was clear that they had in no way altered clinically as a result of the changed conditions.

It was more difficult to classify the patients not seen during the first month of the war. In a few cases it was certain that they had been unable to attend because of anxiety so acute that they could not leave home. In other cases where patients had been evacuated and had then returned to describe adverse affects, it was not always clear whether their symptoms had increased or whether the patients belonged to the group of

complainers described above. Unless the latter diagnosis was absolutely certain, however, we classified them as adversely affected on the basis of their own estimate. Many of the improved group were not seen, because they ceased to attend the clinic.

COMMENTS

Of the 96 patients 56 were substantially unaffected, a fact which appears to support the observations of other workers. Although not altogether surprising, this striking and definite result suggests that no startling clinical change is to be expected in the large group of chronic hypochondriacs and obsessionals under war conditions. It also confirms that the lack of easy response to improved environment or to therapeutic suggestion, so characteristic of these two groups of patients, is related to a mental habit so fixed that it responds as little to adverse as to improved external conditions.

The 23 patients adversely affected could be subdivided into two groups:—

(1) Clear-cut symptoms of anxiety were observed in 15 patients. The mildest amounted merely to some increase in the usual symptoms. The sound of the sirens seems, at least retrospectively, to have made the greatest impression on their minds. Only 3 patients were so ill that they did not dare leave home to attend the clinic. Since 7 of our patients have not been traced, it might be thought that some of them had developed acute symptoms necessitating admission to observation wards. Although this is possible, it is extremely unlikely that such admission would not have come to the notice of our social workers, who coöperate closely with workers in these hospitals.

(2) The second group, containing 8 of the 23 patients adversely affected, consisted of various elements. There were a few women, with sons of military age, whose symptoms were connected with this situation; since most of these patients had already shown these symptoms in connexion with compulsory military training, however, these effects did not seem quite so specific to the outbreak of war as did the first group. There was also a group of patients in whom the adverse affect of the war was due, in part at least, to incidental factors: thus, a patient with a bad leg was afraid that she might not be able to reach an air-raid shelter; a Jewish woman was disturbed by the evacuation of her children to a Gentile home; and an aggressive Irishwoman was annoyed at the inconvenience caused to her by a war with which she had no concern.

Table II shows the numbers of patients in the various clinical groups in whom symptoms of anxiety appeared and of those who were clinically improved. These figures show the lack of response in obsession and hypochondria. Most of the cases of hysteria show a surprising lack of response; but, as has been pointed out, this group consists largely of cases of chronic hysterical personality, which is known to be less responsive than conversion hysteria to environmental changes. The cases of depression and of anxiety, on the other hand,

TABLE II—INCIDENCE OF IMPROVEMENT AND OF ANXIETY ON THE OUTBREAK OF WAR

—	Anxiety	Hysteria	Obsession	Hypochondria	Depression
No. of cases ..	17	16	9	18	23
Developed symptoms of anxiety ..	6	3	0	2	4
Improvement ..	6	3	1	1	4

showed a more definite response to the outbreak of war. It will be remembered that these two clinical groups show considerable symptomatological overlap; nevertheless the results show a distinction between them. Of 23 depressives 10 were unaffected, 9 became worse, and 4 improved. Of 17 patients with anxiety, however, only 5 were unaffected, 6 became worse, and 6 improved. This result suggests that patients with anxiety or with mild depression, even if their condition appears to be chronic, are nevertheless much less fixed in their reactions than the other groups discussed above. Their reaction to the outbreak of war appeared to depend largely on the facilities available for giving an outlet to the anxiety-provoking instinctual energy. In those patients who showed clinical improvement it was often found that they had taken up work directly connected with the war; in other cases the absorbing interest of political events had facilitated the patients' readjustment.

CONCLUSIONS

The results of this survey, although the sample is small, suggest that the type of mental condition, rather than its chronicity, is the decisive factor in the reaction of chronic neurotics to the outbreak of war. Patients with obsession, hypochondria, or chronic hysteria were observed to be no more in need of medical attention in the early days of the war than when under normal conditions. Whatever their social difficulties, they did not tend to develop acute symptoms necessitating admission to hospital. Patients whose complaints were merely those of mild depression or of chronic anxiety, easier though they were to treat under ordinary conditions, appeared much more likely to become acutely ill under conditions of stress, unless suitable provision had been found for them beforehand.

The examination of these neurotics as a group confirmed the inelasticity of the psychological make-up of the chronic obsessional and the hypochondriac. It also seemed to confirm, to a more limited extent, the theoretical findings relating anxiety symptoms to lack of satisfactory instinctual outlet.

These conclusions refer to the described group of patients under the described conditions only; no inferences can be drawn about the incidence of neurotic reactions among the normal population under similar or under more dangerous conditions.

SUMMARY

A group of 96 chronic neurotics attending psychiatric clinics run by the Maudsley Hospital have been followed up since the outbreak of war. They have been classified according to both previous diagnosis and their reactions to the outbreak of war. The results show that 56 remained unaffected by the war, and of the 43 affected 17 improved and 23 became worse. Of the 23 who became worse 15 developed symptoms of anxiety.

We thank Dr. W. S. Maclay, medical superintendent of Mill Hill Emergency Hospital, for his permission to make use of this material; and Dr. M. A. Walsh, in charge of St. Mary's and Mile End Clinics, and Miss M. A. Lane, psychiatric social worker at these clinics, for their coöperation.

DIPHTHERITIC MYOCARDITIS

COMPLICATING MYOCARDIAL DEGENERATION

By GEOFFREY BOURNE, M.D. Lond., F.R.C.P.

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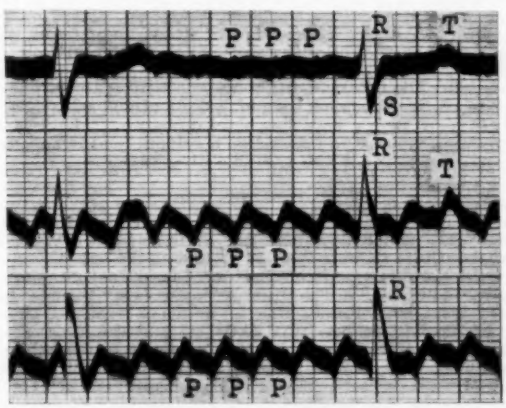
CERTAIN bacterial poisons, such as the toxins of diphtheria, pneumonia, and typhoid fever, cause in the heart an acute and transient parenchymatous myocarditis. The classical example of this is diphtheria, in which recovery, if it takes place, is complete. The diphtheritic lesion is an acute degeneration of the heart muscle-fibres and is, presumably, reversible to some extent. Even when some fibres die they are replaced by fibrous tissue, and hypertrophy of other fibres develops later; hence no permanent damage is manifest. Occasionally, however, cases are reported in which a more permanent myocardial failure follows the acute infection. The chronicity of these is difficult to explain on the basis of proved pathological facts, unless it is assumed that some second chronic myocardial disease is also present. This assumption is logical; for, if myocardial degeneration of vascular origin were present in a patient attacked by an acute infection, the diminution in the local blood-supply might be expected to delay or to obstruct the processes of normal recovery. Only very rarely can this train of events be demonstrated clearly; for this reason

the case described below is of interest, providing such a demonstration in an unusually striking manner.

CASE-RECORD

A woman, aged 79, had had a sore-throat, which she had contracted as a health visitor in poor homes a year before admission to St. Bartholomew's Hospital. Within a week or ten days of the onset she had begun to regurgitate fluids into the nose to an extent which made eating difficult. At the same time her voice had changed, some difficulty being experienced with articulation. Shortness of breath also made its appearance. About six weeks later she had lost the use of her legs, but this weakness was transient, and she recovered from it after a few weeks. The shortness of breath, however, persisted and became worse. Since this illness she had never been strong, and swelling of the feet and legs had appeared eight weeks before admission.

On examination she was found to be orthopnœic, cyanosed, and slightly dyspnœic at rest. The neck veins were moderately distended. The apex-beat was palpable in the sixth left space 6 in. from the middle line and 2¼ in. outside the midclavicular line. There was a mitral systolic murmur at the apex and an aortic regurgitant murmur at the aortic base, also audible down the left side of the sternum. The heart-rate was 42 beats a minute and the blood-pressure 230/70. The radial arteries showed extreme calcification. Œdema of the legs was present up to the thighs, and the skin was œdematous up to the waist. A lumbar cushion was present. The electrocardiogram showed complete heart-block and auricular flutter (see figure). The blood-urea was 40 mg. per cent.



Complete heart-block with auricular flutter.
QRS = 0·1 sec.
Auricular rate P = 300 a minute.
Ventricular rate QRS = 39 a minute.

COMMENTS

There is no doubt that considerable cardiovascular degeneration was present. The calcification of the peripheral vessels was much advanced, and the presence of aortic regurgitation at her age suggested severe atheroma of the aortic ring. The auricular flutter and chronic heart-block are also very suggestive. Moreover the history of the first illness is practically pathognomonic of diphtheria, followed at the correct intervals by paralysis of the palate and some peripheral neuritis. In children and young adults who recover from diphtheria the recovery from myocardial change is always permanent; but in them myocardial degeneration due to vascular change does not occur. In this patient, however, the diphtheria intervened in the course of a slow myocardial degeneration of vascular origin which, as shown by the history, seems to have prevented the recovery from the diphtheritic myocarditis.

It is an inescapable conclusion that when recovery from the myocarditis produced by pneumonia and similar acute infections is incomplete the cause of such incomplete recovery is to be sought in some chronic local change in the heart, the commonest probably being vascular disease. Cases showing so clearly the influence of the two factors are rare.

ETHER CONVULSIONS

REPORT OF A CASE

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AND
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THE following case of ether convulsions occurred recently at the Radcliffe Infirmary under conditions favourable for observation.

The patient was a dark-haired normally developed girl aged ten years, who required operation for the removal of a right-sided tuberculous cervical gland. There was no previous or family history of epilepsy. The child had been admitted to hospital three days before the operation and during this period the pulse and temperature had been normal. On the morning of operation her temperature was 98·4° F. and that of the anæsthetising room, 82° F. Morphia gr. 1/8 and atropine gr. 1/150 had been given at 8.45 A.M. At 9.30 A.M. anæsthesia was induced with ethyl chloride on an open gauze mask, a ring of gamgee being used to protect the face. Anæsthesia was deepened with drop ethyl ether, the mask being partly covered with a layer of gamgee during the later stages. Intubation, which caused no gagging or coughing, was performed nasally by direct vision, using a No. 5 Magill's tube. The endotracheal tube had just been connected to a closed circuit Connell machine delivering oxygen on the carbon-dioxide absorption principle, and the patient was about to be wheeled into the operation room when the following events occurred.

9.45 A.M.: Blinking of the eyelids was noticed. The movements spread rapidly until violent spasms of the face and limbs were established, the trunk being unaffected throughout. Respiration was regular and full, the pulse satisfactory and the pupils widely dilated. Excess oxygen was administered—to remove all ether and any possible excess of carbon-dioxide—and was continued until the patient was removed to the ward.

9.57 A.M.: Evipan 0·5 g. was injected into the right antecubital vein. The convulsions ceased immediately. Operation was postponed but the patient was kept in the anæsthetising room for observation.

10.15 A.M.: A sample of blood was taken for estimation of serum calcium, which was 10·2 mg. per 100 c.cm. The rectal temperature was 100·4° F.

10.30 A.M.: Convulsions began again, first in the eyelids and then in the face and limbs. They were more violent than on the first occasion. Two people held the arm, but even then it was with difficulty that 12 c.cm. of 10% calcium gluconate was injected intravenously in accordance with the suggestion of Hoseason[1] and others. The convulsions continued with unabated violence and the pulse became rapid, irregular and feeble, though respiration continued to be satisfactory.

10.40 A.M.: Evipan 0·6 g. was injected into an ankle vein. The convulsions ceased immediately, and respiration continued.

10.45 A.M.: A further sample of blood was taken for the estimation of serum calcium, which was now 10·6 mg. per 100 c.cm.

12 noon: The patient, by now back in bed, became cyanosed with very shallow respiration and the pulse was still rapid and feeble. Oxygen was given through the endotracheal tube and the condition soon improved.

1 P.M.: The endotracheal tube was removed.

2 P.M.: Consciousness returned.

During the evening the girl complained of slight nausea and vomited twice. Next morning she was quiet but apparently feeling well. Nausea was absent and her appetite good. Her temperature was 100° F.

A week later anæsthesia was again administered. The premedication was once more morphia gr. 1/8 and atropine gr. 1/150. The temperature of the anæsthetising room was 75° F. Ethyl chloride was again used for the induction and anæsthesia was maintained with warmed ether vapour in air, given through an endotracheal tube. At one point, before the operation began, anæsthesia was deepened until respiration was arrested. There were no untoward incidents and the operation was completed

1. Hoseason, A. S. *Brit. J. Anæsth.* 1936, **13**, 142.

satisfactorily. The serum calcium during this administration was 8·9 mg. per 100 c.cm. The child has since progressed well.

The features of the case which seem worthy of note are (1) the recurrence of convulsions after they had once been controlled by the use of evipan; (2) the absence of any effect from the intravenous administration of calcium gluconate and the small rise in serum-calcium produced by the injection; and (3) the fact that during the second administration of ether there were no untoward incidents and the serum-calcium was lower than on the occasion when convulsions occurred.

POSTOPERATIVE DISTENSION OF THE ABDOMEN

ÆTIOLOGY AND TREATMENT

By Harold Dodd, Ch.M. Lpool, F.R.C.S.

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Postoperative distension of the abdomen is an old problem, about which divergent views are still held. A clear, concise, and consistently successful treatment is urgently needed, but it must be such that it does not mask the clinical picture of other complications—e.g., acute intestinal obstruction. This article describes a policy that has developed and proved dependable mainly in treating the distension following abdominal and genito-urinary operations but applicable also to the occasional distension in pneumonia, nephritis, acute cystitis, and uræmia, and to the medical treatment of acute cholecystitis and of appendicitis. The condition is also referred to as acute dilatation of the stomach, tympanites, meteorism, and paralytic ileus.

Two opinions are held about the treatment: the active school believes in remedies designed to restore the passage of flatus and faeces; the rest school aims at resting the alimentary canal and the entire patient, until the exhaustion is overcome and the intestine resumes function spontaneously. Since 1923 I have seen few patients with a genuinely distended abdomen recover if treated by the active method, although some with less distension did; but since I have used the rest regime unreservedly most patients have survived. A temptation in managing these patients is that of swinging from the passive to the active remedies during the tedious early period, when improvement is slow; changing treatment is often fatal. The passive method completely and rigidly applied gives consistent results and is comfortable for the patient.

ÆTIOLOGY

To direct the treatment intelligently a working explanation is necessary. The one put forward here may not satisfy all the physiological and pathological phenomena, yet it is useful as a basis of therapy. It is premised that the distension results from the effects of trauma and shock on the alimentary canal, while constitutionally there are the signs and symptoms of secondary shock.

Local effects.—The effects on the alimentary canal are in and round the operation area and include the signs and symptoms of inflammation common to all injuries: heat, redness, pain, swelling, and loss of function. These are recognised in accidental wounds but their presence in association with operative surgery is often overlooked. They affect the abdominal wall and the hollow and solid viscera.

Knight, Slome, O'Shaughnessy, Holt, and others have shown that after severe trauma there is a transudation of fluid into the tissues round the injury. Thus, a fracture of the femur is followed by the passage into that hind quarter of fluid equal in weight to 40% of the total volume of circulating blood.

It is suggested that after operations on the abdomen a similar regional leakage of fluid takes place into the abdominal muscles, bowel wall, mesentery, and adjacent solid organs: in an operation on the upper abdomen the fluid will escape into the liver, diaphragm, lung bases, heart, and stomach; in an operation on a kidney the adjacent colon, duodenum, stomach, and pancreas will be affected; and in an operation on the bladder the neighbouring small intestine, colon, and rectum will be involved. The bowel wall, mesentery, and omenta become soggy with fluid and darker, and function is inhibited or absent. Tyrrell-Gray (1936) emphasised the congestion in the portal system in ileus.

Constitutional factors.—These are numerous. The variables are the patient's age, the previous illnesses and career, the present illness, and the stage at which it was taken in hand. The quality and quantity of the anæsthetic, of the surgical work, and the management of the patient before, during, and after the operation can be regulated. With secondary shock a serious fall in blood-pressure takes place, and the relationship between the systolic and the diastolic blood-pressures is markedly altered, plus a reduced volume and altered quality of circulating blood. Thus the tissue metabolism, especially for repair, is slowed down or stopped, particularly in the operation area. The problem, therefore, concerns the entire patient. (The passage of flatus or of fæces will not restore the blood-pressure and the circulation or remedy the anoxæmia of the tissues.) Clinical points in assessing the total condition are the temperature, pulse, state of the skin and tongue, colour of the nails (grey, dusky, or pink), and the blood-pressure. The blood-pressure, systolic and diastolic, is seldom read in surgical work, yet it is a most valuable observation.

POSTOPERATIVE PERIOD

After every abdominal operation there is a sequence of events which is not widely appreciated. Lawrence Abel outlined them to me. It fits in with the hypothesis of local inflammation, transudation of fluid, and its resolution. For 36–48 hours after any laparotomy the alimentary tract is inhibited, little or no flatus is passed, there is no gastric or intestinal activity, and the abdominal muscles are steadily guarding. If fluids and food are taken they are often vomited. This standstill is followed by a similar period in which the alimentary tract resumes its functions, but in an irregular spasmodic manner, causing the so-called "gas" or "wind" pains. These phases appear with clockwork regularity, and the assurance to patients and nursing staffs that they are according to schedule gives confidence and mental relief. The stages correspond to the local paralysis in the operation area proper and to the localised transudation of fluid round it in secondary shock. As recovery sets in, the circulation is restored, the congestion subsides, and function returns. A post-operative hourly or four-hourly pulse chart will show that the rate increases, keeps raised, and falls to normal on the fourth day. In septic conditions the period is extended until the infection is overcome. The vital processes of the postoperative period of 72–96 hours must be undisturbed. Passive treatment is intended to assist them by conserving and improving the patient's resources.

TREATMENT

Prophylaxis is the main plank in the management of the distended abdomen—by diligence in the selection of cases, preparation, operation, and aftercare. This communication concerns the patient with a very tense abdomen, possibly with vomiting, following any abdominal operation.

Active treatment.—This will be outlined to indicate what to avoid. The bowel or vowel (A, E, I, O, U) treatment describes it as follows:—

A = aperients. With the onset of distension aperients are given. Tyrrell-Gray (1936–37) deprecated their use.

E = enemata, which then follow. Robb (1932) says: "All one can expect to accomplish by means of enemata is the exhaustion of the patient." Flint (1939) says: "It is useless fussing the paretic gut with aperients or hypodermic drugs; rest is what is needed and is best accomplished by large doses of morphia and sucking out the contents."

I = injections. If the enemata and the aperients fail, hypodermic, intramuscular, or intravenous injections are given—e.g., Pituitrin, eserine, Doryl, acetylcholine, and combinations of these. Even if flatus or fæces are passed, clinical improvement does not always follow nor the distension subside.

O = operation. If there is no bowel action, the surgeon may perform a jejunostomy, a cæcostomy, or an anastomosis —e.g., an ileocolostomy. The critical illness lasts about four days, the pulse-rate steadily rises after the purgatives and enemata, and death follows from exhaustion.

U = undertaker.

Passive treatment.—The aim is to rest both the alimentary canal and the whole patient. Throughout the duration of the distension no aperients or enemata are given, because they irritate the bowels. On the day of onset nothing is given by the mouth, but the mouth is frequently washed out. At least 120 oz. of fluid a day is required; this is injected, beginning with a 5% solution of glucose in saline, followed by a 5% solution of glucose in water given intravenously. If the operation was for acute intestinal obstruction, 3 or 4 pints of saline is given, alternating with pints of dextrose and water. Caution is necessary in the intravenous administration of salines; a too quick or too large infusion will lodge in the capillaries of the pulmonary circulation, a real danger to the lungs, particularly with a failing or toxic myocardium. The lower part of the chest is handicapped already by the limited movement permitted by the distended abdomen. The subcutaneous injection is safer than the intravenous; the technique is less difficult, but absorption is slower and variable, although intelligent massage and supervision assist largely.

After 24–36 hours the patient drinks 1–4 oz. of water hourly, and, if there is no vomiting, the next day drinks of sieved lemons, oranges, or grape-fruit and glucose are added. They may be varied by pineappleade or raisin tea; tomato juice is a good vehicle in which to give salt. These beverages continue unchanged until the pulse and temperature are normal. This takes 3 or 4 days usually, and occasionally up to 12. The nursing staff is instructed particularly that no milk or tea is to be given (often regarded as "nothing" and harmless), for they are irritating and cause epigastric discomfort or oppression, hiccup, retching, or vomiting. The daily intake of fluid by the various routes must be 120 oz. By mouth tap water is tolerated best. The diet is restricted to fruit drinks until the pulse and temperature have been normal for 24 hours. Often the temperature is normal for several days, and the pulse-rate is over 80; but a watch is kept on the patient until the pulse-rate falls to 72–74. The explanation that the pulse-rate is normally fast is rejected. If other drinks and food are started sooner progress stops, the temperature rises again, and the abdominal distension and discomfort reappear.

The fluid balance sheet.—All fluid given by mouth or by subcutaneous or by intravenous injection is measured and noted; the same is done with the output—e.g., urine, vomit, and stomach lavage. This balance-sheet is of great value in estimating progress and the fluid requirements. The intake should be comfortably larger than the output, because of the invisible loss of fluid in the breath and through the skin, the amount being over 20 oz. in 24 hours and much more if the patient is sweating. The patient's tongue is a good guide to the requirements of fluid. It should be large, moist, and U-shaped; a dry, small, pointed, or V-shaped tongue denotes dehydration.

Vomiting is an ominous complication of meteorism. It is carefully watched for, because it may be overlooked, and nursing staffs must realise that retching mouthfuls is vomiting. If the patient has vomited twice the stomach is washed out and is kept empty thereafter by aspiration through the tube, which is retained in the stomach. A timely gastric lavage often quickly relieves a distended abdomen. Vomiting after laparotomy never empties the stomach; it is merely an overflow; 2–4 pints of fluid resembling cold tea or flooded peat-stream water may be withdrawn forthwith. The stomach is irrigated with saline until the returned fluid is clear. Often the emptying of the stomach is the turning-point, followed by sleep and improvement. The stomach is aspirated every 2–4 hours, according to the amounts withdrawn. While the tube is in, the patient drinks freely, because what is not passed on is withdrawn by the periodic aspiration. The stomach-tube is kept in until nothing can be aspirated, although the patient is drinking continuously, or when the fluid aspirated is fresh golden bile. Aspiration is required on the average 2–5 days, exceptionally up to 10–12 days. The removal of the stomach-tube for 3 or 4 hours gives welcome relief, and frequent mouth washes assist.

The policy of absolute rest is departed from for the passage of a warmed lubricated flatus-tube into the rectum twice a day; it is left in about 15 min.

Pain and discomfort are relieved by the application of heat to the abdomen—e.g., with hot-water bottles or an electric pad. Tight bandages are discarded, and the dressings are held with strips of Elastoplast. Bandaging the abdomen tight ostensibly to prevent bursting is avoided, for this embarrasses respiration. The sedative for adults is standardised as a twin injection of morphine sulphate gr. ¼ (never more at one dose) and Cardiazol 1 c.cm. or Coramine 1 c.cm. four-hourly. The cardio-respiratory stimulant counteracts the depression of the cardiac and respiratory centres by the morphine. The administration of coramine is continued four-hourly while the distension persists, even if the morphine is not required. Cokkinis (1936–37) has shown that morphine gently stimulates peristalsis.

The blood-pressure is read daily. If it is low, pressor agents, such as Veritol 1 c.cm. given intramuscularly or a 30% solution of sodium chloride 20–40 c.cm., are given. Sodium chloride is also useful for the ileus (Flint 1939). A primary object is to restore and maintain the heart and lungs at their maximal efficiency. The pulse-rate and the colour of the patient's nails are watched; if the nails become dusky or are dead white, oxygen is continuously given intranasally through twin tubes. Anoxæmia of the tissues is thereby relieved. In a toxic and cachectic patient blood and hæmoglobin estimations are made and transfusions are given to keep the hæmoglobin at least 75–80%. A slow blood-transfusion is a fine tonic to a flagging person.

Flatus is usually passed after a day or so of the "rest" regime, and in another 24–48 hours there is spontaneous defæcation, which is repeated and may become diarrhœa with watery stools. Ordinarily this returns to normal without interference; but, if not, a finger is inserted into the rectum to exclude the possibility of a mass of impacted fæces, which does rarely collect and can cause looseness or even incontinence (Dodd 1938). A pelvic abscess also causes loose and frequent motions, especially after acute appendicitis or a perforated ulcer. On rectal examination the swelling will be felt bulging into the anterior rectal wall; it can be evacuated through the rectum. The rectum should be palpated periodically in anticipation of these complications. The distended abdomen, although soft, remains full for several days after the resumption of alimentary function; it subsides slowly.

The meteorism occasionally seen in pneumonia, or after operations on the kidney, bladder, lumbar, sympathetic, or hip-joints is also regarded as a local manifestation of secondary shock. Purgation and enemata will precipitate it. The treatment is to improve and restore the general condition and to ignore the bowels. The distension disappears in two or three days.

RESULTS

Postoperative distension so treated is rarely fatal. The anxieties have arisen from enemata, aperients, and hypodermic injections given by persons unaware of the "rest" technique—e.g., a deputising house-surgeon. All concerned, including the patient, should understand the treatment, that no aperients or enemata are used, and that the drinks do not include cups of tea, milk, or soup. It is these interruptions that start patients downhill, occasionally fatally. One patient with streptococcal peritonitis had the bowels opened once in six weeks and recovered. The complications encountered may be, intestinal obstruction, subphrenic abscesses, empyemata, uræmia with ileus, and pelvic abscesses. Their clinical pictures are not masked by this treatment, they can be diagnosed promptly, and the patient's condition is throughout optimal.

SUMMARY

The plan of complete rest for postoperative distension of the abdomen is described. It is emphasised that the distension is not merely a local condition but also a manifestation of a morbid process affecting the entire person. Attention should therefore be paid first to the

general condition of the patient; the deflation of the blown-up abdomen is of secondary interest.

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PFEIFFER'S-BACILLUS MENINGITIS

TWO UNUSUAL CASES

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IN the two following cases of Pfeiffer's-bacillus meningitis the meningeal manifestations were apparently preceded by, and probably secondary to, subcutaneous abscesses containing Pfeiffer's bacillus (*Hæmophilus influenzæ*) in pure culture; they were the only cases observed in a native population of nearly 20,000 during several years, and they occurred within a month of each other.

CASE 1.—A native boy, aged three or four months, was brought to hospital with a subcutaneous abscess of a few days' duration over the right elbow. He was emaciated, his temperature was 100° F., and pulse-rate 120, regular, and of moderate volume. His chest and throat were clear, and there was no evidence of nervous trouble. The abscess was aspirated, less than 1 oz. of fluid brownish pus being drawn off; this contained gram-negative bacilli having the cultural characteristics of Pfeiffer's bacillus. Some bacilli showed bipolar staining.

M. & B. 693, 0·16 g. followed by 0·08 g., was given thrice daily for five days, by which time the abscess had cleared up. The temperature remained at about 100° F. with occasional remissions for ten days, after which meningeal manifestations—head retraction, transient deviation of the eyes to the left, and drawing up of the legs—were observed for the first time, though the nervous system had been examined daily. The fontanelle was not tense, and lumbar puncture yielded only a couple of drops of thick turbid fluid containing bacilli resembling those obtained from the abscess and culturally Pfeiffer's bacillus.

Treatment with M. & B. 693 was started again, 0·25 g. being given, followed by 0·12 g. thrice daily. A white-cell count done at this time showed 3900 leucocytes, of which 33 per cent. were lymphocytes, 15 per cent. monocytes, and the remaining 52 per cent. polymorphs (juvenile forms 28 per cent., stab forms 6 per cent., and segmented forms 18 per cent.). No myelocytes and no eosinophils were seen.

The pulse became rapid, and the temperature dropped below normal, where it remained till the child died. At necropsy thick yellow pus was found over the vertex of the cerebrum, its base, and the brain stem. There was slight congestion at the bases of the lungs, and the kidneys were pale and fatty.

CASE 2.—A native child, aged three and a half months, was admitted to hospital in a fairly healthy condition apart from swellings on the left arm and buttock. The swelling on the buttock was incised and pus evacuated containing gram-negative bacilli culturally identical with Pfeiffer's bacillus. No signs or symptoms suggesting involvement of the central nervous system were noted.

Treatment with M. & B. 693 was carried out as in case 1. The temperature, which was 100° F. on admission, settled in three days under treatment, the swelling on the arm cleared up spontaneously, and the buttock ceased to discharge. After remaining normal for twelve days the temperature rose again to 100°–102° F., stayed there for three days, with occasional remissions, then settled, and after a further three days rose again to 100° F.

The next day transient deviation of the eyes to the right, rigidity of the right side of the body, and bulging of the fontanelle were observed. Lumbar puncture produced cerebrospinal fluid containing gram-negative bacilli culturally Pfeiffer's bacillus. Prontosil rubrum one-sixth of a tablet was given twice daily, but the child died four days later.

LOCAL EFFECTS OF SULPHONAMIDES ON THE RABBIT'S BRAIN

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AND
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Jensen, Johnsrud and Nelson (1939) have successfully treated a large series of compound fractures and dislocations by the implantation of crystalline sulphanilamide between the bone-ends in addition to the usual surgical measures of débridement, primary suture and immobilisation of the limb. In Germany Tönnis (1940) recommends the temporary packing of open cerebral wounds with a tampon steeped in Prontosil. By these means it is claimed that a high concentration of the sulphonamide is ensured locally during the earliest stages of the infection.

It is important to know how the tissues may react to such treatment. As a corollary to a more extensive investigation of various antiseptics upon the rabbit's brain (Russell and Falconer, 1940) we have made some further experiments with finely powdered sulphanilamide and sulphapyridine (M. & B. 693). In our earlier investigation we also tested soluseptasine (M. & B. 137). Our object in these experiments was to ascertain the local histological effects of various bactericidal agents on the brain. We are not concerned here with the rationale of their use from a bacteriological point of view. Details of the operative procedures and the control experiments will be published elsewhere with the full account of our earlier work. In brief a decompression opening about 2 cm. by 1 cm. was made over the dorsal surface of the left cerebrum, the dura reflected and the underlying brain treated as follows:—

SOLUSEPTASINE

(*a*) Pledgets of lintine soaked in a 3·3% solution in isotonic saline (pH 10) were laid on the surface for ten minutes after scarifying the arachnoid membrane in a few places. In addition 0·1 c.cm. of the solution was injected into the cortex with a finely graduated tuberculin syringe. The wound was then closed. The two rabbits so treated were killed after two and four days respectively. (*b*) The steps were repeated using a similar solution buffered to pH 7·4.

Results.—The leptomeninges and cortex at the site of exposure showed, on macroscopic and microscopic examination, no severer damage than was found in a control series using normal saline instead of the soluseptasine solution. The reaction to the injection was

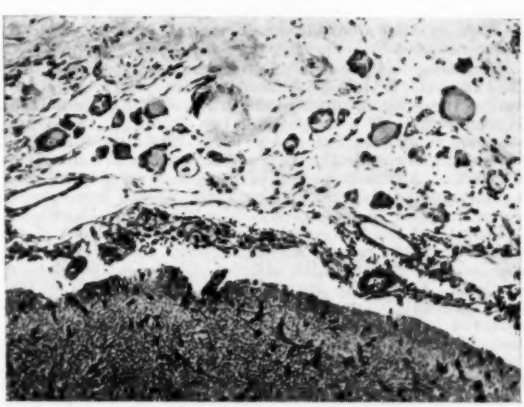

FIG. 1—M. and B. 693. Particles in leptomeninges enclosed by cells four days after application (H. and E. ×100).

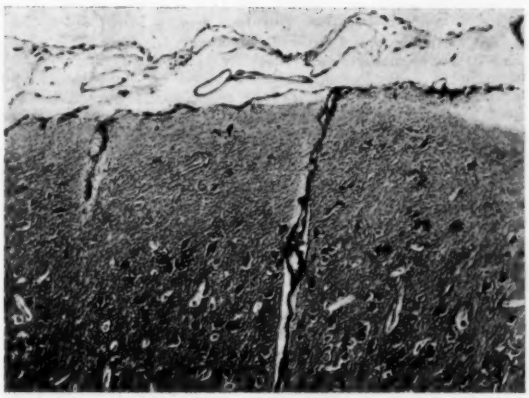

FIG. 2—Sulphanilamide. Site of exposure two days after operation. Shrinkage of a few neurones and œdema in superficial cortex. (H. and E. ×100).

slight, consisting of a narrow zone of œdematous tissue in which a few polymorphonuclear leucocytes and degenerating neurones were present. Although the number of experiments was small it appeared that the buffered solution caused slightly less degeneration and inflammatory reaction than the unbuffered solution. This we would expect because control experiments using isotonic saline buffered to pH 10 had previously shown us that the superficial neurones underwent severer degeneration in this alkaline medium than with a strictly neutral solution.

SULPHANILAMIDE AND SULPHAPYRIDINE

(*a*) In a similar operation on the rabbit's brain, a thin layer of powdered sulphanilamide just sufficient to cover the area was sprinkled on the intact arachnoid membrane. It was estimated that about 14 mg. was used. The wound was then closed. (*b*) The experiment was repeated after scarifying the arachnoid membrane in five or six places to permit penetration into the leptomeningeal spaces. (*c*) Using a fine-bore (Harris) lumbar-puncture needle a small pellet of the powder weighing about 1 mg. was delivered into the depths of the cortex through a smaller opening in the skull. Three rabbits were used in each group. They were killed after one, two and four days respectively. A duplicate set of experiments was made with sulphapyridine.

Results. Macroscopic.—After 24 hours no trace of the sulphanilamide was found in the wounds. Sulphapyridine persisted for two days but was not seen with the naked eye after four days. The exposed cortex was unaltered in all groups. The puncture wounds were identified as a thin red streak, the adjacent cortex being normal. Leptomeningeal injection and small areas of hæmorrhage were more conspicuous in the sulphapyridine experiments than in the sulphanilamide.

Microscopic.—The appearances of the leptomeninges and cortex in the exposed areas confirmed our macroscopic observations except in one particular: a few particles of sulphanilamide were still present in the leptomeninges four days after operation in both groups 1 and 2. Similarly a few particles were found in the track of the puncture wound in the animals killed after two and four days. In agreement with the macroscopic findings many more particles of sulphapyridine persisted in the leptomeninges and were conspicuous after four days. In all instances the particles both of sulphanilamide and of sulphapyridine in this site were partly or wholly enclosed by a layer of foam-cells (fig. 1). In addition similar foam-cells and a few multinucleate giant-cells were present in the leptomeningeal spaces. Thus after two days a foreign-body reaction had already begun and was advanced by four days. Enclosure of the particles by foam-cell was less rapid in the puncture wounds: they were only partly enveloped after four days. In other respects the appearances of the cortex and leptomeninges (fig. 2) resembled those obtained in our earlier experiments using normal saline instead of the test substance.

COMMENT

Our experiments showed that no appreciable damage is sustained by the cortex and leptomeninges of the rabbit's brain when exposed to soluseptasine (3·3%) or to finely powdered sulphanilamide and sulphapyridine. But if these substances are to be used locally in this way it appears preferable to use them in solution. The low solubility of sulphanilamide, and even more of sulphapyridine, results in the persistence in the wound of particles of the powder even when only small quantities are used. These particles excite a foreign-body giant-cell reaction and are thus engulfed within a few days of the application. This must diminish if it does not nullify any further local action of the substance. If larger amounts of the powder are used the foreign-body reaction would be proportionately greater and might be expected to cause the undesirable local effects of a granuloma. If therefore circumstances dictate the use of a powder the smallest effective quantity should be applied. From our experiments we consider that the amount should be just sufficient to cover completely the exposed surface. Other things being equal sulphanilamide is more suitable than sulphapyridine since it is more soluble; 1250 mg. will dissolve in 100 c.cm. of normal cerebrospinal fluid incubated for 14 hours at 35° C.; the corresponding figure for sulphapyridine is 85 mg. (J. O'Brien, personal communication). Jensen and his colleagues recommended solid sulphanilamide since it enabled the highest possible concentration to be reached at the actual site of infection. If sulphapyridine, or large amounts of sulphanilamide, are to be used for the brain it would be preferable to apply them as saturated solutions in isotonic saline. Isotonic solutions of soluseptasine can also be used.

SUMMARY

The local application of soluseptasine, solid sulphanilamide and solid sulphapyridine to the rabbit's brain does not cause any appreciable damage to the tissues.

Owing to their relative insolubility the quantities of dry substance used should be minimal. Sulphanilamide is preferable to sulphapyridine since it is more soluble. Excess of either substance will excite a foreign-body reaction which, in the brain at any rate, might entail unfortunate consequences. Solutions are preferable from a histological standpoint.

Our thanks are due to Prof. W. E. Le Gros Clark who generously allowed us to make our experiments in the department of human anatomy; to Mr. J. O'Brien of the Radcliffe Infirmary for biochemical help; and to Mr. Chesterman of the department of human anatomy for the microphotographs.

The expenses of this work were defrayed by a grant from the Medical Research Council, whom we also thank.

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VOLVULUS OF CÆCUM ASSOCIATED WITH REVERSED ROTATION OF MIDDLE GUT

BY C. C. HOLMAN, M.B. Camb., F.R.C.S.
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ON Jan. 4, 1940, I saw in consultation a woman, aged 66, who had had for three days symptoms suggesting intestinal obstruction. She was plump, with dry tongue and distended abdomen. The right iliac fossa was tender and an indefinite tumour could be felt in the epigastrium. Under anæsthesia a lump could be felt just to the right of the middle line below the umbilicus. At operation this lump was found to be twisted mesentery, and gentle manipulation delivered an immensely distended cæcum. There was a volvulus of the cæcum and ascending colon, the latter being freely mobile. The volvulus was untwisted, and the cæcum was emptied through a small Paul's tube. The empty bowel appeared

so badly damaged that I decided to resect it. The ascending colon, being traced upwards, disappeared behind the mesentery of the small intestine and reappeared farther on as the transverse colon (see figure).

Diagram of condition found at operation after the volvulus had been untwisted: (*a*) liver; (*b*) transverse colon; (*c*) cæcum; (*d*) mesentery of small intestine.

I divided the transverse colon and, having freed the proximal portion, pulled it through the tunnel in the mesentery and proceeded with the resection, finally performing a lateral anastomosis between small and large bowel. For a few days the patient made surprisingly good progress, but on Jan. 9 she looked less well, and in the evening her temperature shot up to 104° F. Her condition steadily deteriorated, and she died on the 11th. Her terminal symptoms suggested portal pyæmia. There was no necropsy.

An almost identical condition, in a man about the same age as my patient, was described by Norman M. Dott (*Brit. J. Surg.* 1923, **11**, 251), who also gave a lucid account of the embryology of this anomaly. The patient, treated in the same way as mine, died three days after the operation. Dott found only one other case reported, in which the condition was discovered post mortem in a child aged seven days.

SUPRARENAL HÆMORRHAGE IN MENINGOCOCCAL SEPTICÆMIA

WATERHOUSE-FRIDERICHSEN SYNDROME

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PROFESSOR OF PATHOLOGY IN THE UNIVERSITY

IN the present epidemic of cerebrospinal meningitis there have been fulminating hæmorrhagic cases in which the patients have died within twenty-four hours of onset and in whom death was preceded by sudden circulatory collapse and coma; it is probable that in these cases there was suprarenal hæmorrhage of the type described by Waterhouse (1911) and Friderichsen (1918).

CLINICAL PICTURE

The so-called Waterhouse-Friderichsen syndrome usually occurs in previously healthy children under 2 years of age but is not limited to children. The clinical features are striking. The patient early shows signs of circulatory failure, with pallor, shivering, tachycardia, and rapid shallow respiration. Abdominal pain and vomiting are common and may be the earliest symptoms. The onset is soon followed by the appearance of a rash, which may be petechial and even occasionally frankly ecchymotic or may be macular and resemble the eruption of measles, except that each spot shows an underlying blue or purplish tint which does not disappear on pressure. The signs and symptoms of collapse become rapidly more pronounced, and a characteristic cyanotic hue develops which is most obvious in the macular rash but also apparent in the skin generally. Restlessness, which is often prominent in the early stages, now gives way to listlessness, and the patient passes into coma, from which he does not recover; death ensues as a rule within twenty-four to forty-eight hours. In many, possibly most, cases signs of meningeal irritation are absent and at autopsy the meninges may show only slight congestion or, occasionally, early inflammation. The striking and usually the only pathological feature in the internal organs, which is presumably responsible for the circulatory collapse, is a massive hæmorrhage in the suprarenals destroying both or in some of the protracted cases one of the glands.

The association of a petechial rash with suprarenal apoplexy was first recognised as an entity by Little (1901), but Waterhouse (1911) first completely described the symptoms and pathology. Friderichsen (1918) described 2 personal cases and reviewed Little's 12 cases and 16 reported by other authors. Since then more reports have appeared. Most workers have ascribed the lesions to a fulminating septicæmia, and in the earlier reports a variety of organisms which had been isolated were regarded as possible causes. Maclagan and Cooke (1916) described the syndrome in undoubted cases of fulminating cerebrospinal fever in the epidemic of 1914–16, and since then the meningococcus has been incriminated in an increasing number of cases. McLean and Caffey (1931) demonstrated gram-negative intracellular diplococci in smears of blood from the petechiæ in 86 per cent. of a series of clinical cases of spotted fever and obtained cultures of meningococci from the blood in 68 per cent.

The petechial element is so pronounced in a small proportion of these cases that a diagnosis of fulminating purpura has been considered. It is even possible that some at least of the cases recorded as purpura fulminans, in which clinicians have long suspected an infective basis, may have been unrecognised examples of the Waterhouse-Friderichsen syndrome.

CASE-RECORDS

In February, 1940, one of us (W. H. G.) performed autopsies on 3 cases which showed such a striking similarity in their clinical histories and in the lesions found at autopsy that there appeared to be little doubt about their ætiology. Though these 3 were geographically widely separated, all occurred during the height of an epidemic of meningococcal meningitis, and, in spite of the fact that the conditions under which the autopsies were performed precluded any but post-mortem histological examination of tissues, they were probably all examples of meningococcal septicæmia terminating in suprarenal hæmorrhages.

CASE 1.—A girl, aged 3½ years, the second of three young children of a collier, was fit and took a normal breakfast on the day of her death. About noon she became severely ill, with pallor and restlessness. She was seen by her family doctor in the middle of the afternoon, by which time she was barely conscious and showed a bright rash, resembling that of measles, over the face, arms, chest and abdomen. The child became rapidly worse, and the rash and intervening normal skin cyanotic. She died about 6 P.M. without regaining consciousness. The doctor was unable to certify the cause of death.

At autopsy twenty-four hours after death the rash was still obvious as dusky bluish macules. The brain and meninges were rather congested but showed no other lesion. Both suprarenals were dark red and greatly distended by hæmorrhage, which formed a mass of clot in the interior and had spread into the cortex, destroying its normal architecture without rupturing the capsule. The remainder of the body showed no lesion. No histological examination was carried out.

CASE 2.—A female infant, aged 7 weeks, living about four miles from case 1. She was artificially fed and took her morning feed normally. About noon she was noticed by the mother to be pale and breathing rapidly. In the early afternoon the family doctor diagnosed pneumonia, but was unable to give any medicine by mouth, because the child could not swallow. About this time a rash appeared, which was similar to that seen in case 1 and soon afterwards assumed the same cyanotic hue. The child became comatose and died about six hours after the onset of the illness.

An autopsy was performed about twenty-hours after death. The rash still persisted. The brain and meninges were congested but showed no other change. Both suprarenals showed massive hæmorrhage similar to that of case 1. The remainder of the body was normal. Histologically the suprarenals showed hæmorrhage spreading throughout the tissue and disorganising the whole architecture of the gland. Medullary elements could not be distinguished, and there was no inflammation or necrosis of the cortical tissue. Kidney and liver showed only slight cloudy swelling. Spleen, thymus, heart, and lung showed no lesion. Cultures, taken from spleen and heart blood, showed no growth of any significant organism.

CASE 3.—A single woman, aged 20, living fifty miles from cases 1 and 2 in an area from which no cases of cerebro-spinal meningitis had then been reported. She attended a theatre on the evening before death and there complained of feeling cold. Diarrhœa and vomiting started during the night. Next morning her doctor noted on the whole of the front of the body a rash similar to that described in cases 1 and 2 but somewhat redder and more petechial. About midday the rash became cyanotic, as in the previous cases, and the patient passed into coma and died about 3.30 P.M.—eighteen hours after the onset of symptoms.

Autopsy was performed forty-eight hours after death. The rash was still obvious and was definitely petechial. The meninges were congested but showed no exudate. There were petechial hæmorrhages beneath the pericardium, the endocardium of the left ventricle, and the peritoneum of the small intestine. There were several larger petechial hæmorrhages throughout the pelvis, especially on the right side of the uterus, and about 1 oz. of fluid blood had collected in the pouch of Douglas. There was also some fluid blood in the vagina, but there was no evidence of instrumentation of the genital tract, and the patient was a virgin. Both suprarenals were distended and disorganised by hæmorrhage.

Histologically the suprarenals showed hæmorrhage similar to that in case 2, with the same mechanical separation of the cortical cells without necrosis. Spleen and kidneys showed only autolytic changes. Cultures from spleen, heart blood, and the uterine cavity remained sterile.

In cases 2 and 3 the sections of the tissues were examined for bacteria. No intracellular gram-negative diplococci were found, but in case 3 a single pair of cocci morphologically similar to meningococci, were found in a glomerular tuft. In case 2 blood from the liver and spleen was smeared, stained, and examined, and gram-negative extracellular diplococci were found in the splenic blood.

COMMENTS

These 3 cases fulfil all the clinical and pathological criteria of the Waterhouse-Friderichsen syndrome. In none of them was a blood-culture made before death, and the autopsies were done so late that cultures were of little value. The causal agent is, however, presumed to have been the meningococcus, because, in spite of careful search, no other organisms or foci of infection were discovered, and all the cases occurred at the height of the recent epidemic of cerebrospinal fever, in most cases of which the meningococcus was found.

TREATMENT

In spite of our lack of exact knowledge of the factors determining the incidence of these suprarenal hæmorrhages, a line of rational treatment may be considered. Two aspects of these lesions should be borne in mind. First, there is no reason to believe that the hæmorrhage takes place simultaneously in both suprarenals; in fact the occasional finding of unilateral suprarenal apoplexy suggests that the vascular rupture usually involves one organ first. By the time that both glands are involved it is probable that no form of treatment could be of any avail, but while one suprarenal is intact there is always the possibility of staving off its involvement. Secondly, unlike in diphtheritic or other toxic hæmorrhagic necrosis of the suprarenals, there is no histological evidence of severe degeneration in the cortical cells. The medulla is usually so completely replaced by the escaped blood that its structure is not discernible, but the cortex shows only the mechanical disruptive effects of the hæmorrhage. In view of this a temporary suprarenal substitution therapy seems to be the immediate requirement. Treatment should therefore consist of the prompt administration of sulphapyridine in adequate dosage by mouth, or of its sodium salt by intramuscular injection in comatose patients; and of steps to combat the severe shock and restore and maintain the blood-pressure by a transfusion of plasma or blood and the administration of extracts of suprarenal cortex.

The Waterhouse-Friderischsen syndrome is so rare that treatment along these lines will seldom be possible; but in the last few weeks we have had the opportunity of adopting it in a woman of 40 who was admitted to hospital with all the clinical signs of the syndrome. She has since made a satisfactory recovery, with full restoration of her blood-pressure.

We wish to thank Mr. J. A. K. Fearns, H.M. coroner for Cheshire (Eastern division), and Mr. Humphrey Llewellyn Jones, H.M. deputy coroner for Flintshire, for permission to publish these cases; and Drs. Ward, Spark Welton, and James Howard for supplying the clinical details.

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Reviews of Books

Diseases of the Urethra and Penis

By E. D'ARCY MCCREA, M.D., M.Ch. Dubl., F.R.C.S., hon. surgeon, Salford Royal Hospital, Manchester. Bristol: John Wright and Sons. Pp. 306. 21*s*.

ANDROLOGY is emerging as a full-blown specialty and this book will occupy an important position on its bookshelves. Though some deplore this extreme specialisation in medicine it must be accepted as inevitable, and the literature of medicine has become so vast that textbooks dealing with diseases of definite organs have become a necessity. Mr. McCrea has here reviewed the main surgical writings on the penis and urethra and amalgamated them with his own findings. It is difficult to know which to commend most highly, the general plan of the book, the clarity of the text, or the excellence of the illustrations. The last, indeed, are of a quality seldom found in English textbooks. In discussing such difficult subjects as the various plastic operations for the cure of hypospadias the help of illustrations is of paramount importance and the author has wisely been generous in his use of them.

Cancer of the Larynx

By CHEVALIER JACKSON, M.D., F.A.C.S., honorary professor of broncho-œsophagology, Temple University Hospital, Philadelphia; and CHEVALIER L. JACKSON, M.D., F.A.C.S., professor of broncho-œsophagology at the hospital. London: W. B. Saunders Company. Pp. 309. 40*s*.

THIS is a peculiar book—perhaps deliberately. In the preface the authors explain that they have divided it into three sections because they believe that there are three classes of laryngologist. The first is only interested in the practical management of the case in hand; for him the authors have prepared their first section which tells him how cancer of the larynx can be diagnosed and treated. The second class of reader apparently possesses some slight curiosity about ætiology, pathology and differential diagnosis, and the second section is meant to appeal to him. The third section of the book contains historical matter concerning the operations of larngofissure and laryngectomy. This arbitrary division has resulted in a very fragmentary account and it is difficult to see what the authors have gained to compensate for the loss of smoothness and continuity. After all, the book is a monograph on a highly specialised subject within a specialty and presumably no-one reading it would be interested in the rule of thumb account of the first section. The style is an odd mixture of didactic and ponderous phrases and colloquialisms. Much of the book is an account of cancer of the larynx as handled in the clinic at Temple University Hospital. It gives a picture of swift and accurate diagnosis and effective removal of early growths, but no recent figures are given of more advanced cases. Extrinsic cancer is not considered at all, except for a remark that any growth escaping outside the cartilaginous framework of the larynx should be treated by radiotherapy. A description of the natural history and treatment of post-cricoid carcinoma would have been welcome. Although the authors discountenance operative measures for extrinsic growths, on grounds of mutilation, they strongly but inconsistently advocate laryngectomy as a suitable operation in advanced but wholly intrinsic carcinomata. Emphasis is laid on the "narrow field" method of laryngectomy; the advantages claimed for it are dubious and it is impossible to assess its practical value since no figures are given of post-operative morbidity and recurrence-rate in cases in which it has been used. The

indications given for it are not very convincing. The illustrations are excellent; a particularly good series of drawings of Babcock's method of laryngectomy whet the appetite for a description of the operation, which is omitted from the text. Coutard's method of protracted fractional doses of high voltage X rays might have been more fully described and illustrated by results. Apart from the "narrow field" technique nothing new is described in the book. It is readable and interesting but disappointingly misses authority and freshness.

Tuberculosis and National Health

By H. HYSLOP THOMSON, M.D. Glasg., D.P.H. county medical officer of health and county tuberculosis officer for Hertfordshire. London: Methuen and Co. Pp. 259. 10*s*. 6*d*.

THE control of tuberculosis is both a social and a clinical problem and neither of these can logically be divorced from the other. Too often, however, there exists a dividing line between the scope and interests of the public-health worker and those of the clinician. Dr. Thomson's book supplies a distinct need in bridging this somewhat artificial gap. He touches on many of the important questions relating to tuberculosis, such as ætiology and types of bacilli, housing, the importance of early diagnosis and the aftercare and employment of patients. Some of these are discussed in detail, the chapter dealing with milk and tuberculosis being particularly full and informative. It is refreshing to find Koch's bacillus regarded as only the immediate cause of tuberculosis and other factors in the pathogenesis, including the mental side, given their rightful place. It is difficult to condone the statement that "senile tuberculosis is probably less dangerous as a source of direct infection than other types of the disease." There springs to the mind a picture of the elderly man with time on his hands and his favourite grandchild on his knees; here proximity counterbalances the scantiness of the sputum and the relatively benign course of the illness. There is, however, little to criticise in this book and much to praise. It is tastefully arranged and contains at the end a useful bibliography divided into chapters together with a summary and conclusions.

Chemical Constitution of Natural Fats

By T. P. HILDITCH, D.Sc. Lond., F.I.C., Campbell Brown professor of industrial chemistry in the University of Liverpool. London: Chapman and Hall. Pp. 438. 35*s*.

AFTER a short general survey of natural fats Dr. Hilditch considers the various fats of aquatic and land plants and animals, especially in respect of the organic acids and the glycerides present. The constitution of human fat is not discussed. He shows that knowledge of the constitution of fats is valuable in the study of their metabolism in animals and plants, a novel view that merits further attention. The book ends with a description of experimental methods which should be of value to workers in this field, since much of the information is otherwise only to be found dispersed amongst papers. It is a pity that an index of authors is not included.

Arthritis and Allied Conditions

By BERNARD I. COMROE, M.D., F.A.C.P., instructor in medicine, University of Pennsylvania, U.S.A. London: Henry Kimpton. Pp. 752. 40*s*.

THE meteoric rise of the picture magazine occurred, not because it could be "read" by even the illiterate, but because the information conveyed was superficial, immediate, and above all vivid. In many other spheres the value of such vivid apprehension is becoming realised, and medical books—especially American ones—have shown increasing numbers of illustrations. Their quality, however, is of prime importance, and a book of this size with 200 illustrations must be judged largely on this. There are only nine original illustrations, four of which are diagrams and five apparently duplicate photographs of the same patient; the remaining 191 are borrowed from recent literature. In paper-saving England one might protest against five half-page drawings of the technique of intramuscular injection, but most of the pictures are admirably chosen. In contrast to many English books on the subject this one is fully documented—at times over-documented, for example, "patients rarely die of backache[46]"—but among the abstracts from 2600 references (90% in English) it is difficult to find the author's own opinions, except in the chapters on treatment. A third of the text is taken up with the treatment of rheumatoid arthritis, and herein lies the chief value of the book. Dr. Comroe reviews fully the various proposed and accepted methods, adopting an attitude of enthusiastic conservatism and sceptical experiment. With other American authors he is non-committal about the existence of fibrositis and doubts that of "tuberculous rheumatism." There are exhaustive chapters on painful shoulders, feet and backs, full of sound and practical advice. He has collected detailed information on foot exercises, the treatment of bunions and corns, the construction of arch supports, and shoe manufacture, and ends with some advice on the organisation of an arthritis clinic.

Physiology in Health and Disease

(3rd ed.) By CARL J. WIGGERS. London: Henry Kimpton. Pp. 1144. 42*s*.

Professor Wiggers of Cleveland estimates that about a third of the text has been rewritten for this edition, and that 1400 new references have been added. The book remains a mine of recent literature, of less use to the student than to the teacher who should look up the references for himself. The text tends to be overloaded with facts, and a good deal of insight on the part of the reader is taken for granted. It is a book to be worked at rather than read, but is worth having for the excellent section on the circulation. The style is virile and stimulating, and originality is the keynote. For this reason the student should have access to more conventional texts. To the author, who has laboured long to illuminate the subject in his own way, it is but a slip that aqueous vapour is omitted in the calculation of gaseous pressures in the lungs, but the mistake might be considered fundamental if made by an examination candidate. Nevertheless the book, with its individual character, is a contribution to physiology.

Elmer and Rose's Physical Diagnosis

(8th ed.) Revised by HARRY WALKER, M.D. London: Henry Kimpton. Pp. 792. 45*s*.

Essentials of the Diagnostic Examination

By JOHN B. YOUMANS, M.D., associate professor of medicine and director of postgraduate instruction, Vanderbilt University Medical School. London: Humphrey Milford, Oxford University Press. Pp. 417. 16*s*. 6*d*.

THESE two books are written by sound and up-to-date American physicians, engaged in teaching medicine. The elements of case-taking and the technique of physical examination, as taught by them, follow the orthodox lines familiar in all good English-speaking medical schools. Elmer and Rose is a standard American text, a largish book, amply illustrated. In its first part the theory and practice of inspection, palpation, percussion and auscultation are fully discussed, with due reference to "clinical anatomy and physiology," and with full consideration of pathological changes. Dr. James Asa Shield writes the section on examination of the nervous system and the mental condition. The second and third parts present the pathology and physical signs of diseases of the respiratory and circulatory systems, and discuss their diagnosis. The fourth part is a short account of some special methods relevant to these conditions, including electrocardiography.

Dr. Youmans's much smaller book has a wider field. He is a postgraduate teacher, and sets out to describe physical examination and laboratory methods as they may be carried out by the general practitioner. The bedside examination is dealt with, in the style of a succinct revision course, in a third of the book. The laboratory section includes examination of urine, fæces, sputum, gastric contents, cerebrospinal fluid and other body fluids, as well as a fairly full hæmatological section and a chapter on skin tests. An appendix lists the apparatus and reagents required for an "office laboratory." We doubt whether a truly general practitioner could or should undertake all the laboratory work here described, but there is no reason why the physician member of a partnership should not do so, and to such this book should be particularly useful.

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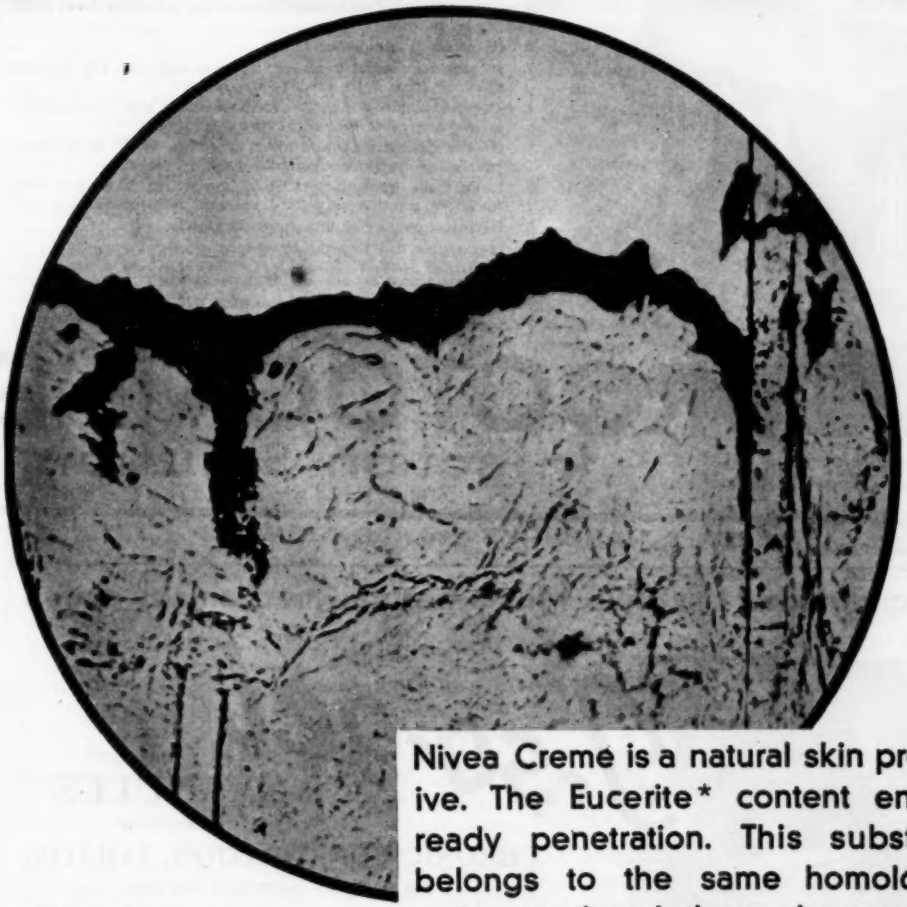

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[1] *British Medical Journal*, 1935, November 16th, p. 938.
[2] *British Medical Journal*, 1938, January 15th, p. 105.

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THE LANCET

LONDON: SATURDAY, JULY 27, 1940

A REINFORCED LOAF

In the last war, though bread was kept unrationed, it was only possible to maintain the supply by extracting 91% of the wheat grain and adding 1 part in 8 of other cereals, beans or potatoes.[1] In this war we are still eating white bread and using just over 70% of the wheat grain without any diluent; from Mr. Robert Boothby's announcement in the House of Commons on July 18 it seems to be the Government's policy that we shall continue to do so. Modern scientific investigation of nutrition has made it quite clear that wholemeal bread is a more nourishing food than white bread and that it would be better for the nation's health to eat brown bread. This bald statement standing alone would provide a good reason for making a universal change towards browner bread, but the question is far more complicated than this. People do not like brown bread; pigs and poultry do like and need the bran and germ which form the milling offals when white flour is milled; brown flour does not keep; brown bread needs much more yeast to bake it than white; brown bread has usually been dearer than white. All these considerations, beside that of purely nutritional advantage, had to be weighed by those responsible for deciding policy. In the conditions which now prevail we are constantly told that it is desirable that stocks of food should be scattered as widely as possible. Many of our flour mills are at the ports where the grain arrives and if the wheat is to be distributed quickly it must be milled first and stored elsewhere as flour. In so far as this is the case the flour must be in the form in which it is most easily preserved. There is no doubt that this form is white flour, and the fact constitutes a cogent reason for retaining white flour for general consumption.

The health aspect of the matter is of overwhelming importance also, and the Government have met this part of the problem with remarkable skill. By ordering that wholemeal bread shall be available at the same price as white they remove the grievance of those who complain that they do not eat brown bread because it is too expensive. It is to be feared, however, that unless it is legally specified the "wholemeal" bread sold at the same price as white will not contain the nutritively valuable germ. By ordering that white bread shall contain vitamin B_1 and calcium salts the Government have made good two of the most serious nutritive deficiencies in white bread, provided of course that the two substances are added in what are recognised to be sufficient amounts. Bread is the staple food of the poorer people—its nutritive value is of relatively small importance to the well-to-do. The average daily consumption of bread and flour in the country is just over ¼ lb. per head but the distribution of the consumption is very uneven.[2] Better-off people may average no more than 4 oz. a day, whereas in the last war it was found that the average daily consumption in some families doing heavy manual labour was as high as 1¼ lb. a head! It is just these people, whose diet is lowest in the expensive protective foods—milk, cheese, eggs, fruit and vegetables—and highest in carbohydrate, who will most benefit by the fortification with added vitamin and mineral. The more carbohydrate is consumed, the more vitamin B_1 is required, so that to choose bread as the vehicle and wed vitamin B_1 with carbohydrate in such a way that raising the consumption of one automatically raises the consumption of the other is a happy device.

Increased consumption of carbohydrate does not in itself increase the need for calcium, but high consumption of a foodstuff like bread, low in calcium, tends to be accompanied by a small consumption of the expensive protective foods rich in calcium. It is not at present clear whether calcium is to be added to the wholemeal as well as to the white bread, but it would be well if it were so, for brown bread, though rich in vitamin B_1, is not much richer than white bread in calcium. A better vehicle than bread for universally distributing this indispensable mineral could not be found, and we shall hope to see the nation's teeth and bones, its health and its stature, show forth the harvest of this piece of applied science. For the public should not forget that the exact knowledge thus applied has only been obtained by medical and scientific workers in all lands after laborious and detailed toil. These workers are not satisfied that the addition of vitamin B_1 to white bread makes it as good a food as wholemeal; the extent to which some other nutrients which are absent in white bread are present in wholemeal bread, and the degree to which the human body requires them, are not yet fully established. The investigators must continue their researches, and when this knowledge too has been made precise today's enlightened step in bread legislation could be followed by others.

1. First Report of the Royal Commission on Wheat Supplies, London. 1921.
2. Orr, J. B. Food, Health and Income, London, 1936.

MENDING THE FACIAL NERVE

Facial paralysis is a great disfigurement, and its æsthetic and psychological consequences may have a serious effect on a person's prospects in business and society. The problem of treatment is therefore a worthy one, and surgeons have interested themselves in it for many years, but there is still no common agreement about the indications for operation and the best operation to be employed. The early attempts were chiefly directed to re-innervation of the paralysed muscles by anastomosis of the hypoglossal or accessory nerves to the damaged facial nerve. This procedure prevents wasting and contracture, preserves muscle tone, and maintains a reasonable symmetry of the face at rest. But attempts at voluntary movement, and the involuntary facial movements which occur during innervation of the tongue or shoulders, produce an unsightly grimace bearing no resemblance to the subtle movements of expression. This disadvantage is a serious one, although Coleman[1] says it can be minimised by training the patient to suppress emotional movements. When the lesion is in an inaccessible site (as in fractures or gunshot wounds through the petrous bone, or after the removal of benign tumours of the cerebello-pontine angle) the

1. Coleman, C. C. *Ann. Surg.*, June, 1940, p. 958.

choice for the surgeon and the patient is between a complete facial paralysis (with epiphora, ectropion, wasting and contracture), some kind of plastic operation (which may support the wasted face but will not restore muscle bulk or movement) and anastomosis. Most will probably choose anastomosis. The patient should be a partner in the choice and will contribute most when he can be shown examples or photographs of the end-results.

The operations of decompressing the facial nerve in its bony canal, and of grafting when there has been actual loss of substance of the nerve, are applicable when the lesion is in an accessible situation. This is the rule in Bell's palsy and often so in cases of mastoid disease or injury. These procedures are on a different physiological plane from the anastomoses in that they aim at restoring the continuity of the pathway between the motor cortex and the muscles for which the cortical impulses were originally intended. That the functional recovery falls short of perfection may be due to some misdirection of the axons growing from the proximal stump so that they fail to reach their exact original destination—fibres intended for the angle of the mouth may find their way to the eyelids, and vice versa. Further, a damaged axon may branch and ultimately supply more muscle-fibres than it was intended for; an impulse passing along it may thus produce a more widespread movement than was called for. These same phenomena occur in the repair of peripheral nerve injuries in other parts of the body, but they may influence the functional result more in the face than elsewhere because of the intricate character of the facial musculature. Nevertheless, Miss COLLIER's report on another page shows that very satisfactory results can be obtained in an encouraging proportion of cases, results which are much more nearly physiological than those obtained by nerve anastomosis.

Before embarking on any of these procedures, it is important to know that recovery is not going to take place spontaneously, for otherwise unnecessary operations will be done which may leave the patient with a result less desirable than even an incomplete spontaneous recovery. In the inaccessible lesions where anastomosis is contemplated nothing much is to be lost by waiting for two or three months, provided the muscles are kept from wasting by massage and galvanism. If at the end of that time there is no evidence of recovery and the reaction to faradism is absent the patient should be offered the choice of operation. The time factor is of more importance in the accessible lesions. Miss COLLIER defines the indications for operation in the cases of mastoid disease and injury. When the facial nerve is known to have been damaged at operation, or when the paralysis is observed immediately afterwards, exploration should be undertaken as soon as the patient's general condition allows. For the cases in which the paralysis is known to have come on at an interval after operation no treatment is necessary as long as the electrical reactions are intact; if after the lapse of two or three weeks the paralysis is still complete and the response to faradism is lost exploration is advisable. Until more of these operations are done we will not know how long a case may remain untreated and still benefit from a decompression or graft, but certainly if it is left until the galvanic response is lost no good can come from these operations. Miss COLLIER thus rightly advocates early treatment.

With Bell's palsy the position is not yet clear. What is needed is a statistical analysis of the results of conservative treatment. It is known that the majority of cases never lose the faradic response and that complete functional recovery can be expected. Of the remainder, in which the response to faradism is lost, what are the chances of recovery when the response is lost for two, three, four weeks or longer? How long may the faradic response be absent and yet spontaneous recovery take place? Is the length of time for which the response is lost related to the completeness of recovery and to the subsequent development of facial spasm or mass movements? Until the answers to these questions are known all that can be said is that probably no case of Bell's palsy should be operated on within a month of the onset. If there is then no evidence of recovery and no response to faradism decompression of the facial nerve is justifiable, since in any case the operation should not prejudice the chance of further spontaneous recovery. As important as the selection of cases and the mastery of a special technique is perseverance with physical treatment after operation. Recovery is slow and coöperation between the surgeon, the physiotherapist and the patient has to be maintained for months before the first welcome flicker of voluntary movement appears.

THE CASE-NOTE AS NEWS STORY

A MEDICAL journal, seeking to publish matters of common interest to a highly specialised profession, will naturally try to record all progress in remedies and treatments new and old. The knowledge and experience of workers will be communicated in the tradition of HIPPOCRATES; his followers will desire neither monopolistic profit from their discoveries nor personal advertisement. Presented in this spirit and intended primarily for a limited professional audience, the information can be set forth in a fashion which would need reconsideration if destined for a much wider circle.

These preliminary sentences are suggested by an incident which we will treat as hypothetical. Valuable notes of the recent treatment of acute war neuroses are recorded in a medical paper. Two cases illustrating the symptoms of mental illness are extracted from the article (not without acknowledgment of their source) and republished in a popular Sunday newspaper under the caption "Hypnotism Aids Cure of Stricken Soldier." While the epithets "dramatic" and "sensational" are for once eschewed, the transcriber uses his art to heighten the drama and the sensation in the stories he re-tells. It is perhaps a minor and personal objection that the doctor concerned is mentioned by name as "the noted psychiatric specialist"—a description certain to be as distasteful to him as it is unethical in its implications. The major and general objection is that psychiatry is a form of healing which, above all others, requires the supreme confidence of the patients in their doctor. He cannot but fear that those patients, though unnamed, will identify themselves by this exposure of their secrets so painfully preserved, and will feel their faith in their professional adviser to have been misplaced. Their misgiving may

easily spread to others undergoing like treatment. If this prejudicial aspect of publicity had occurred to those responsible for re-publishing the stories, it is impossible to believe that they would have taken any step which might hinder for one moment the recovery of men who have suffered for their country.

The pages of technical newspapers are, it is understood, scanned by the columnist in search of items of general interest. No-one can complain of that, nor will medical journals claim any special immunity. Provided that false hopes are not raised, it may be as much to the public advantage that information of new treatments should be widely known as that popular newspapers should refuse to publish advertisements of remedies which promise to cure the incurable. But the fundamental difference of method between the general and the technical press is obvious. On the one side there is the legitimate ambition to publish a human story with a wide appeal. On the other there is a concentration upon the professional aspect and a tradition of restraint based on knowledge that damage to health and happiness may follow if personal confidence is not respected. If protection is necessary for that confidence—as such hypothetical cases would suggest—how is it to be secured? This is a war matter; men and women are now being punished for careless talking; the defence authorities possess unprecedented powers to punish careless printing. The peace-time law of copyright offers, of course, its remedy of injunctions and damages, but these are slow in overtaking the mischief which has the start of them. There ought to be some means of preventing the case-notes printed in a professional journal from being exploited for the sake of the "news story." A member of Parliament suggested last week to the Minister of Information that, in order to check the careless few, the British press which has shown so much restraint in war-time should follow the precedents set by the medical, legal and other professions, and create its own representative council of advice and discipline. If such a council were established—as the Minister observed, the movement must come from inside the profession—this kind of problem would properly engage its attention.

If there were a prospect of a new statutory remedy, there is a possible analogy in the curiously framed statute of 1926 which forbade the printing, in reports of judicial proceedings, of "indecent medical, surgical or physiological details, the publication of which would be calculated to injure public morals." The prohibition was accompanied by a saving clause for "publications of a technical character bona fide intended for circulation among members of the legal or medical profession." This is an important precedent for enacting that what may be licensed for a limited audience may be refused to the general reader. Cannot we have as much protection for health as for morals? Many have long wanted some better judicial or statutory recognition of the elementary rights of personal privacy. If a law for this purpose could be enacted with such a saving clause as the 1926 act contains the difficulty might be met. Meanwhile let us see what can be done by an appeal to the non-technical press to bear in mind that real harm may occasionally result from the unrestricted reproduction of technical matters in cases hypothetical or otherwise.

Annotations

LESSONS OF THE *THETIS*

THE inquest on the victims of the *Thetis* ended, more than a year after the disaster, with a verdict of death by misadventure. No-one was blamed. This was inevitable, for the primary cause, the blocking of the test cock of number 5 rear door with bitumastic enamel, was followed by so many secondary contributing causes that responsibility was diffused.[1] Of more interest than the apportionment of blame is the manner of the death of these men and perhaps of many of their colleagues since then. Jenkinson[2] points out that, in addition to the risks which beset all seamen, the crews of submarines must face caisson disease, oxygen-lack, and poisoning with chlorine, carbon dioxide and oxygen. About 3 P.M. on June 1, 1939, the *Thetis*, with 103 men on board, sank in Liverpool Bay. She settled on the sea-bed at 3.40 P.M. Three attempts were then made to reach and close the open rear door of number 5 torpedo tube through the forward escape chamber. These attempts were abandoned because some, not all, of those taking part suffered intolerable pain in their ears as the pressure in the chamber rose, presumably because they were not adept at opening their eustachian tubes. The chamber does not seem to have been flooded too quickly. It was then 7 P.M. and it was decided that nothing more could be done before dawn. By midnight the air was already getting foul. It was, moreover, under increased pressure owing to the partial flooding of the ship, and, as is usual, no means were available of absorbing the carbon dioxide. Owing to this, and to the fact that all the provisions were in the flooded compartments, many on board were in a very weak state by morning. It was then realised that as it would take ten or fifteen minutes for each pair to escape, the remaining air would not support life long enough for all to go. Two officers left by the after escape chamber without any difficulty other than that due to the tilt of the ship. A mistake, understandable in the circumstances, was then made. Four attempted to leave together. Either because of overcrowding or because of the difficult slant, there was some delay in opening the hatch. The chamber was drained and all but one, who died soon after, were found to be dead. None was wearing his nose clip and one had torn off the mouthpiece of his Davis apparatus. The apparatus was in perfect order. One can only suppose that they lost their heads. Despite this discouragement, two more men then made good their escape. The symptoms of the crew when they left clearly show a deficiency of oxygen and an excess of carbon dioxide. Haldane[3] has judged that the partial pressures were approximately of CO_2 6% and of oxygen 16% of an atmosphere, pressures at which the impairment of judgment, diminished emotional control and muscular incoordination characteristic of oxygen-lack would begin to show themselves, combined with the excessive panting of carbon-dioxide poisoning. We have no further witness, but doubtless there followed an increasing mental dullness, coma and a painless death.

Owing to one of those accidents which dogged the ship, there was not quite enough escape apparatus. Yet when the *Thetis* was raised 50 of the 99 men were wearing their sets. We can only surmise why no more men escaped. One cause was probably the slant of the deck up which the weakened men failed to make their way. The other is suggested by experiments carried out by Haldane and four friends on themselves. They found that after breathing air of approximately the composition of that in the *Thetis* for an hour, three of them vomited

1. Report on the Tribunal of Enquiry into the loss of H.M.S. *Thetis*. London: H.M. Stationery Office.
2. Jenkinson, S. *Brit. J. Surg.* April, 1940, p. 767.
3. Alexander, W., Duff, P., Haldane, J. B. S., Ives, G. and Renton, D. *Lancet*, 1939, **2**, 419.

on breathing pure oxygen. Those who failed to make good their escape may well have been incapacitated by the sudden change to pure oxygen.

It would be a pity if the failure of these men to escape by means of the Davis apparatus were to reflect at all on its efficacy. Haldane said in his evidence before the tribunal that he did not see how the apparatus could be improved. There is no doubt that the failure was human and not mechanical. The danger of waiting so long before attempting to escape was not fully realised and some of those on board were not so fully trained in the use of the apparatus that they could feel at home in it. Had the four men who were drowned in the after-chamber waited quietly for the water to drain away they would have suffered no harm. Instead, when the hatch stuck, they became impatient and removed their nose-clips, and in one instance the face-piece as well. This spells lack of training. Escape devices are not liked by all submarine officers, and the good tight-rope walker hates to wear a safety belt. Though the feeling may be understood, it must not be allowed to lead to a neglect of training.

DRUNKENNESS AND THE WAR

AT the beginning of this year an airy paragraph in the press stated that the war had caused a sudden and alarming increase in drunkenness in a northern industrial town. Dr. Harvie K. Snell, M.O. of Liverpool prison, decided to investigate the truth of this assertion. Not everyone who gets a little drunk lands in gaol; but Liverpool prison serves a wide area in North-West England and North Wales, including numerous urban and rural districts, and so may be regarded as fairly representative of the country as a whole. Dr. Snell's inquiry into prison statistics [1] covered the first four months of the war, and his figures show that there was an appreciable fall in the incidence of drunkenness during that period. Social and economic factors no doubt contributed in some measure to bring about this unexpected but welcome result. Many just cannot afford the price of the stuff and so have to go without, but it may be questioned whether the blackout ever deterred any but the most chicken-hearted toper from groping his way to a favourite hostelry. Among the psychological factors cited by Dr. Snell are the quiet determination and resolute acceptance of the present situation in contrast to the wild enthusiasm manifest in 1914, better developed organisation and regimentation which relieve the strain on psychoneurotic individuals, a heightened sense of social responsibility born of better education and fostered by a series of crises, and the static character of the war itself during its early months. It would be interesting to know whether recent changes in the tempo of the war have had any corresponding adverse effect; whether, in fact, we are becoming a tight little island in both senses of the word.

THE BLOOD-BRAIN BARRIER

THE question of the permeability of the blood-brain barrier, more especially in relation to the pathogenesis of neurotropic virus infections, has recently been raised again by Doerr.[2] Up to a few years ago it was generally believed that under normal circumstances colloids did not pass from the blood into the cerebrospinal fluid. Later observations have shown that foreign proteins, such as serum globulins, and especially antibodies, may pass the barrier, though the concentration found in the cerebrospinal fluid is always a minimal fraction of that present in the blood. It has also been shown that in animals it is possible to demonstrate the presence of a bacteriophage some 50 mμ in diameter in the cerebrospinal fluid of animals provided that the whole of the cerebrospinal fluid is taken for examination, though as Burckhardt [3] has pointed out the passage of demonstrable quantities depends on a high concentration in the blood. Since it has been found that comparatively large protein molecules can pass from the blood into the cerebrospinal fluid, fresh investigations have been made with tetanus toxin. It was at one time believed that the toxin reaches the central nervous system by centripetal spread along the peripheral nerves, but experiments on the intravenous injection of tetanus toxin now favour the view that there is a direct spread from the blood-stream to the nervous tissues. Possibly a similar path is followed by diphtheria and botulinus toxins. Incidentally, Doerr seems to draw no distinction between passage from the blood-stream into the cerebrospinal fluid and passage from the blood-stream into the actual tissues of the brain and cord. Whether the two barriers are equally permeable under all circumstances would need further investigation. Doerr applies the findings obtained with bacteriophage and tetanus toxin to the question of the passage of viruses into the central nervous system. In the case of a few viruses there is undoubtedly centripetal spread by way of the peripheral nerves, but in the majority of cases it is suggested that the virus passes directly from the blood-stream to the brain or cord. Most workers would agree with the statement that if sufficiently large doses of any virus are given intravenously to suitable experimental animals virus will reach the central nervous system with the production of either an active or a latent infection. There will be less agreement with the statements that under natural conditions the liability to invade the nervous system is directly correlated with the number of virus particles in the blood-stream, and that the liability to invade the brain is lessened by prolonged passage in the central nervous system. For the yellow-fever virus and its neurotropic variant neither of these statements is accurate. No hard and fast rule, it seems, can be laid down for all viruses.

1. *Brit. J. Inebriety*, July, 1940, p. 28.
2. Doerr, R. *Schweiz. med. Wschr.* June 8, 1940, p. 504.
3. Burckhardt, K. *Arch. Virusforsch*, 1939, **1**, 40.

PECTIN-AGAR FOR INFANTILE DIARRHŒA

EVER since the apple-diet for diarrhœa in infants and young children began to be popular efforts have been made to overcome alleged disadvantages by using the active principles, so to speak, of the apple. Pectin and cellulose have been selected as the elements in the diet of proved value, and now Howard and Tompkins [1] of Omaha have reported good results with a pectin-agar mixture. They used as basic mixture consisting of pectin 6·3%, agar 4·3% and dextrimaltose 89·4%. One cup or 8 oz. by volume of this powder is equivalent to 480 calories. The standard method of use has been to cook one cupful of the pectin-agar powder for ten minutes in a double saucepan with 24 oz. of milk. While still hot the desired amount is poured into feeding bottles. When required the resulting jelly is re-warmed and shaken, and is readily taken through a rubber teat with a big opening. Babies are fed at their ordinary hours, and the total amount of pectin-agar mixture given is half that of the milk-mixture they were having before, the missing fluid being made up with water between feeds. Thus the calorie value of the daily intake is maintained at a normal level, since the standard pectin-agar-milk mixture yields 40 calories per ounce, or double the calorie value of cow's milk. For infants past the age of six months and older children an even more concentrated feed is made up, and can be flavoured with fruit juice, vanilla or chocolate, according to taste. Older children may be given the jelly cold. The mixture is continued until the stools become normal, when a normal diet for the age is gradually substituted. Good results were reported in twenty-three newborn infants suffering from an unusual type of diarrhœa at this age, with blood and mucus in the stools. The specific ætiological agent in these cases was not proved. Fifty older infants and children with diarrhœa were also treated with pectin-agar

1. Howard, P. J., Tompkins, C. A. *J. Amer. med. Ass.* 1940, **114**, 2353.

in their own homes with gratifying results. The stools quickly become normal, vomiting is reduced to a minimum, weight is gained because calorie intake is maintained, the infants are not fretful and the dangers of starvation and dehydration are avoided. Indeed, Howard and Tompkins speak in such glowing terms of their mixture that they sound rather like an advertisement for a patent medicine. Nevertheless, they present their results in a satisfactory way and offer a reasonable explanation for them. The high carbohydrate nature of the feeds prevents ketosis, the bulk of the feeds probably diminishes rather than increases peristaltic activity and the pectin seems to have a kind of detoxifying and adsorbent action. The pectin may also exert a hæmostatic effect when there is much bleeding from the bowel. Complete recovery of twenty-three newborn infants with the severe type of diarrhœa described is a stern test of any form of therapy.

COMMITTEE ON THE TREATMENT OF WAR WOUNDS

WE announced recently (June 29, p. 1174) the appointment by the Medical Research Council of a committee, including representatives of various civilian and military medical services, to advise as to the application of the results of research to practice in the treatment of war wounds, and as to the need for new investigations. The membership has since been enlarged to include representatives of the Royal Air Force, the Emergency Medical Service in Scotland and the Ministry of Pensions. The full list is now as follows: Sir Cuthbert Wallace (chairman), Mr. E. Rock Carling, Dr. E. A. Carmichael, Colonel L. Colebrook, Mr. C. H. S. Frankau, Prof. F. R. Fraser, Prof. G. E. Gask, Surgeon Rear-Admiral G. Gordon-Taylor, Colonel Sir Charles Gordon-Watson, Group Captain G. L. Keynes, Prof. J. R. Learmonth, Sir John Ledingham, Colonel C. Max Page, Major-General H. Marrian Perry, Prof. R. S. Pilcher, Prof. J. Paterson Ross, Mr. P. Jenner Verrall, and Prof. W. W. C. Topley (secretary), with Dr. F. H. K. Green as assistant secretary.

HOME-GROWN BELLADONNA

LONDON drug merchants used to get their belladonna leaves from various European countries which are now cut off from commercial contact with the United Kingdom. Both wild and cultivated plants were imported; the output of cultivated plants from Württemberg at one time dominated the world markets. Since the war started the stocks in home warehouses have gradually been depleted, and it has not been practicable to replenish them in the customary ways of commerce. As stocks shrank prices naturally rose for both the leaves and the root; and the time came, several months ago, when open quotations were withdrawn because the quantity available had shrivelled to almost nothing. The United States is in the same case as the United Kingdom; at the beginning of July the figure quoted on the New York drug market for belladonna leaf was 52 cents per lb., a famine price, six times as much as the leaf would fetch in normal times. Our dependence on the Continent for supplies of a plant which grows wild in England, and which is even cultivated in a number of counties, is remarkable, but imported dried leaves used to be so cheap that the English market could not compete, so foreign countries, where labour was cheap, and the industry already flourishing, could dictate world prices. As in the last war, the absence of foreign supplies has stimulated home production; larger quantities than usual of belladonna leaf have been gathered this season and the scarcity has been relieved by supplies of recently harvested plants. As might be expected prices are very high, but those quoted in London are much below the New York quotations. Belladonna leaf is now available in adequate quantity to meet the needs of the near future and the prospects of a famine have been averted. Established herb farmers in West Suffolk and in two or three other counties are doing their best to meet the emergency. The Ministry of Health last week conferred with owners of English herb farms, horticultural experts and other parties likely to be helpful in connexion with the production of belladonna and other medicinal plants, and an official plan for avoiding an acute scarcity of these vegetable raw materials may be announced in due course.

MELANIN

THE first question that arises in any anomaly of pigmentation is the nature of the colouring matter responsible. Sometimes this point can be decided on the history—as with tattoo-marks, tar particles after road accidents and pigmented nævi—but there are cases in which a biopsy is the only certain means of deciding between the presence of melanin and blood-pigment. Blood-pigment abounds in hæmosiderin, which is an iron-containing amorphous substance, easily identified by the potassium-ferrocyanide or ammonium sulphide stains on the skin section; melanin, on the other hand, occurs in the skin in the form of microscopic granules, varying in tint from light brown to black, and contains no iron. In spite of much chemical investigation its exact formula is unknown, but the present view that it is related to tyrosine and adrenaline is probably not wide of the mark. We know that in certain lower animals melanins are produced by the action of specific oxidases on tyrosine, and it was this fact that inspired Bruno Bloch, in his researches with dopa (dihydroxyphenylalanine). He regarded this compound as almost identical with the pro-pigment which is eventually converted by oxidases to melanin in human skin; however, dopa has never yet been isolated from that source. Although complete confirmation is lacking there is a good deal of evidence to support his views, and his work is still the keystone of most of the more recent investigations. Prof. E. Meirowsky, in a recent summary,[1] quotes investigations which cover a wide field including most of the animal kingdom, from fishes, reptiles and amphibians to mammals and the human species. The appearance of melanin in the course of a pathological condition is often significant. That melanin is formed in the epidermis itself is no longer disputed, but the central problem today is the origin and significance of the dendritic cells which contain it. Meirowsky concludes that they are not neurogenic in origin but modified epithelial cells. Bloch has demonstrated that cells which when stained with the usual reagents look like the ordinary cubic variety in the basal layer, assume a branched dendritis appearance when the dopa method is applied. Meirowsky is further convinced that melanin is produced not only in the dendritic cells but also independently in the cells of the malpighian layer. This conclusion, if correct, seems to support the view that the dendritic cells have other functions than the manufacture of pigment, and that they may have developed from the undifferentiated epidermis as a special system, much as the Langerhans cells develop from the ordinary cells of the pancreas. He regards the pigment in the corium as being a different variety from epidermal melanin and of unknown origin. While he does not regard dopa-produced pigment as genuine melanin, Meirowsky provides evidence that adrenaline or its oxidation products may be important as forerunners of melanin. Among the morphological as opposed to the chemical precursors of melanin there is a colourless pro-pigment in the cells of certain tissue-cultures grown in a medium containing only glucose and inorganic salts; its existence proves, he considers, that those cells which naturally produce melanin provide also their own pro-pigment. Whether the precursors are formed by the protoplasm or the nucleus of the cells concerned is still undecided, but Meirowsky maintains that wherever melanin is formed

1. *Brit. J. Derm.* July, 1940, p. 205.

after irradiation of non-pigmented skin with a Finsen lamp it is preceded within the nucleus by an increase of the substance which is stained red by the Pappenheim-Unna reagent. In some instances, he says, all shades from the red substance to the very dark pigment can be demonstrated, and in precipitate melanogenesis sometimes the whole nucleus or the nucleoli are transformed into pigment.

SOCIALIST BENCHWORK

IN a broadcast last Sunday to Canada Miss Dorothy Thompson, the American columnist, spoke of Socialist Britain where poor children are living in the homes of the rich at the expense of the state. This long-distance description of evacuation may surprise those of us who live too near to the realities of evacuation to realise its social significance. But an opportunity to take stock of the situation is at hand. The Fabian Society in its Evacuation Survey [1] have presented us with a study of a "laboratory experiment in state control" which is a welcome relief from the exchange of anecdotes on enuresis and lousy heads which often takes the place of a discussion of evacuation. In her preface Mrs. Margaret Cole describes the scheme as "military, male and middle class." And certainly it was the niggling but important pricks of life—such as the difficulty of two strange women sharing the same kitchen amicably—which were overlooked. Mrs. Cole's co-editor, Mr. Richard Padley, has described the national scheme in the first part of the survey. The second part is a symposium on its effects on local administration and the social services. The main criticism levelled against the scheme is that through fear of overcrowding too much stress was laid on billeting accommodation and too little on the social services which happened to be available in the reception areas. The billeting was usually arranged by amateurs while professionals, such as public-health visitors, sat idle in first-aid posts. There was a lack of coöperation between the billeting officer and the medical officer of health. Cases of children billeted in homes with an open case of tuberculosis are reported. Difficulties were increased by the individualism of our local government machinery. The Government tended to leave local authorities to fight out questions of finance between themselves which often meant that in every sense the reception area was "left with the baby to hold." In the early days at least the Board of Education seems to have been too amenable to the Ministry of Health and education with which the medical care of children is so closely linked was dislocated in some places. So much for the scheme and its effects. But it has also raised problems and in his chapter in this section Dr. Haden Guest suggests that we have missed an opportunity of applying the principles of nutrition to an important section of the community. He regrets that Sir John Orr was not appointed director of evacuation and that no general scheme of communal feeding was introduced in the early stages. Dr. Guest holds that the rise in prices has so far made more difference to our food habits than rationing. Thus people who found it difficult to buy enough to eat in peace-time are finding it impossible in war-time. Dr. Guest would like to see free milk and free meals provided for all our children, so that we may end the war with a healthy young generation. Camps have been put forward as the solution of many of the problems of billeting, but Dr. John Bowlby, who discusses the psychological aspects of evacuation, thinks they would bring their own problems, and he does not recommend them at all for children under 11. The young child needs a homely background and is dependent on the love and friendship of those around him. For him the family billet is probably best. Dr. Bowlby also urges that prolonged separation of very young children from their mothers should be avoided as it may cause grave emotional disturbances later. Where it is unavoidable the child should be given into the care of some foster-mother so that a permanent emotional relation can develop.

A cross-section of evacuation is given at the end of the survey where there are descriptions of its effect in evacuated areas, and in rural and town reception areas. The Government's second scheme is set out in an epilogue. Perhaps we shall soon know how it will work; but in the meantime we can learn much from this study of a social experiment in our midst.

1. London: George Routledge and Sons. 1940. Pp. 296. 10s. 6d.

THE TOURNIQUET IN LEFT VENTRICULAR FAILURE

THERAPEUTIC venesection, at one time used with such enthusiastic indiscrimination, is now recognised to have a very restricted value, the two main indications being polycythæmia and left ventricular failure. There has lately been a renewal of interest in the alternative measure for left ventricular failure introduced by Tabora [1] some thirty years ago, in which blood is pooled in the extremities by means of venous tourniquets. There seems to be little doubt of the efficacy of this procedure but there has hitherto been no experimental evidence that it does produce an appreciable pooling of blood. Ebert and Stead [2] have now done some experimental work which supports the clinical reports. They found the total blood volume of five subjects with normal cardiovascular systems to be 5580 c.cm. The average volume of blood in the head, trunk and one arm, calculated by applying tourniquets at a pressure of 250 mm. Hg. to the other three extremities, was 4680 c.cm. In other words the average amount of blood in one arm and both legs was 900 c.cm., about 16% of the total in the body. In the same five people the application of venous tourniquets at diastolic pressure to three extremities resulted in the removal from the head, trunk and remaining extremity of an average of 720 c.cm. of blood. In four of seven normal people tested the application of tourniquets to three extremities produced nausea, sweating and pallor. Tourniquets inflated to a pressure of 110 mm. Hg. were applied to the three extremities in two patients with hypertension. In the first patient, whose blood-pressure was 210/160 mm. Hg., sweating, pallor, nausea and mental confusion developed and at the end of sixteen minutes the blood-pressure had fallen to 90/70 mm. Hg. while a diastolic gallop rhythm originally present had disappeared. On releasing the tourniquets the blood-pressure rapidly rose but the gallop reappeared more gradually. There were similar signs of collapse in the other patient. The disappearance of the gallop rhythm in the first case is ascribed to a fall in the pulmonary venous pressure. The beneficial effect of the tourniquets reported in cases of left ventricular failure persists for some time after their release, presumably because there is a fall in plasma volume from transudation of fluid into the tissues. The method has obvious practical advantages over venesection, but there is need for caution in its use. To produce collapse in a patient suffering from left ventricular failure is far from advisable, and in such cases repeated applications of the tourniquets for say ten minutes might be more beneficial than one longer application.

1. von Tabora, D. *Munch. med. Wschr.* 1910, **57**, 1265.
2. Ebert, R. V. and Stead, E. A. Jr. *J. clin. Invest.* July, 1940, p. 561.

Dr. S. G. MOORE, who died on July 15 after an accidental fall, was medical officer of health for Huddersfield for nearly thirty years and a pioneer of maternal welfare in the town. He was in his 75th year.

The College of Physicians of Philadelphia awarded the Alvarenga Prize to Dr. Ernest W. Goodpasture, professor of pathology in the Vanderbilt University, Nashville, Tennessee, for his contributions to the knowledge of viruses.

In England Now

A Running Commentary by Peripatetic Correspondents

IN the year 1577, William the Silent, who was not greatly given to pronouncing eulogistic opinions concerning his fellow men, declared Sir Philip Sidney to be one of the ripest statesmen in Europe. Sidney was then twenty-three, and two years earlier Queen Elizabeth had named him "one of the jewels of her crown." When he was no more than twenty Sidney had met in friendship almost every eminent and learned man in Europe, he was mature, he was accepted as a scholar, a polite poet and a statesman in European capitals. Today a Philip Sidney, were he to elect to enter on a medical career, would be hard put to it to earn commendation from his teachers during his student days at an age at which his prototype was already a jewel in the crown of Good Queen Bess. At twenty Sidney was the esteemed friend of the learned Hubert Languet, thirty-four years his senior. At twenty the medical student of today is, as a rule, sundered by a wide gulf from any intimate intellectual friendship with any of his teachers. In all this there are two things that of necessity lead to the play of imagination. Is it the knowledge of such lives as those of Sidney and many others that has led some of us to regard the modern medical student of twenty or so as an immature and irresponsible creature? And again, we might well ask how a Sidney would fare today in the medical curriculum?

The first question we may attempt to answer by passing from the spacious days of Queen Elizabeth to our own student days. There is a general tendency for us seniors to decry modern youth as being irresponsible and immature. I registered as a medical student well over forty years ago. In May, I attended, almost as a ghost, the meeting of the British Medical Student Association held in Manchester. In my days as a student at one of the London medical schools we thought we were men. We had no recognised debating society, but some of us followed the then youngish George Bernard Shaw. We had ardent Fabians among us. We had socialists, imperialists and advocates of all sorts of superficially-held creeds and crank tenets. We argued at length; we became violently partisan. These times were little more than a slightly more mature extension of those in which, in school days, we wore the colours of Oxford or Cambridge or of Liberal or Conservative and were prepared to defend them to the death despite any real knowledge of the merits of either side—save that we had an uncle at one or other of the universities or a cousin in politics on this side or that. But as I listened to the medical students stating their case in Manchester all this vanished and I realised more vividly, what I have long held to be true, that those of my generation never spoke, as students, with such sanity, knowledge or poise as did these young people. No student body of my days could have produced delegates capable of speaking from so much knowledge and with so much sincerity and sanity as did the members of the British Medical Student Association of 1940. Now and again it seemed that one could detect the betrayal of apprenticeship served in the local debating society, but the slime of pure verbalism sullied only a very small proportion of the speeches. From the point of view of pure unaffected sincerity, the plea of a West African student for providing the necessities for training native doctors with a knowledge of local conditions and thereby liberating British medical men was a little masterpiece. The speaker did not allude to the great work done in Fiji, which would greatly have strengthened his already incontrovertible argument.

* * *

The main thesis of the first session was a definite and articulate expression of a leaning towards an earlier university ideal in which the relation of teacher and student was far more intimate than it is today. Coupled with this was the formulation of a series of suggested reforms in the medical curriculum. The appreciation of the existing deficiencies in the medical course was perhaps not quite so novel as some of the speakers imagined; even the very reasonable remedies suggested had been in the minds of many of their seniors and had been voiced by them in university councils the world over for many years past. Not one of the resolutions passed at this session was in any way revolutionary or beyond the ordinary policy of some university or other in this or other countries. The conference agreed that the ability to use knowledge rather than to accumulate detailed fact is the basis of education; this necessarily implies an essential preliminary cultural and scientific background. To achieve this the five or six years of medical training must have entire cohesion, inter-departmental barriers must be removed, and subjects must be correlated. They considered that curriculum committees with representation of staff and students should be formed for orientation and adequate direction of teaching, and that those who teach in medical schools must be selected on their ability to teach rather than on their experience as specialists or research workers. They felt that the small discussion group must replace the formal lecture class as the unit for teaching; and that a central medical authority should conduct a unified, national examination conferring the right to practise. They recommended that to meet the need for more doctors the numbers entering the profession should be increased so that, with the help of scholarships, students could be drawn from a greater section of the population; and finally that medicine should be taught with great emphasis laid on its social importance.

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The second session of the congress was concerned mainly with the question of the newly qualified doctor in relation to war-time conditions. Since the congress was held the war situation has changed so profoundly that certain of the resolutions are already out of date in their intention or are realised in present circumstances. In essence, it may be said that all were directed towards an efficient coördination of the newly qualified doctor in the war machine, with the provision of adequate safeguards that educational courses should be in no way curtailed by the emergency. In particular the conference expressed its belief in the value of postgraduate experience and resolved that: "While realising the exigencies of the present situation and wishing in no way to interfere with the supply of doctors to the services, the conference took the view that the first year after qualification constitutes an essential part of medical training and that, wherever possible, doctors should not be compelled to enter the services before this year of training has elapsed." It also stressed the importance of reserving a sufficient number of "house-jobs" for women in order to secure the experience "which is essential to qualify them for those responsible posts which they are willing and desirous to undertake." No-one listening to the speakers at this conference could doubt that the modern medical student realises both his responsibilities towards the community and the reciprocal responsibility of the authorities to provide him with an adequate education. He is also beginning to realise the necessity of fostering a corporate spirit, not only by the formation of student associations but by the establishment of student-organised loan funds for their necessitous fellows. In Manchester the university union has already established such a fund and beyond doubt this is a step in the right direction. Let us hope that we are for ever done with the business of regarding the medical student as an irresponsible person.

* * *

Le Quatorze Juillet—it must have brought sad thoughts to many besides the French. On July 14 last year we were in the South of France at a small hotel well off the beaten track, to which we had been attracted by the discriminating praise of that remarkable gastronomical guide "Les Auberges de France." It was a homely place, and we made friends particularly with Monsieur and Mme. V. (he was a French engineer living near Paris, who had fought in the last war), and Dr. and Mme. K. with their jolly young family from Switzerland. Early in the morning Monsieur V. had hoisted little flags on the terrasse—la France, la Suisse and Grande Bretagne. Monsieur B., the patron prepared a special dinner with bouillabaisse as the outstanding dish; and after dinner the V's, the K's and ourselves motored into Ste. Maxime for the celebrations. My chief recollections of it are Monsieur V's disquisition on aperitifs over an iced Ricard: the competition of a patriotic brass band with

the din of the sideshows: and the gaminerie of a huge, twenty-stone cheapjack. This typical Marseillais was introducing various lots to be drawn for by a triple spinning lottery wheel, and his tickets were going like hot cakes. He produced a marketing basket and put in a couple of bottles of wine, added another and then another, and capped it with a bottle of champagne. He took out each item once more and showed them to the crowd, asking himself publicly why he should be such a fool as to give them so great a bargain for a two francs ticket. He called a little assistant forward, to hold up the brimming basket for any sceptics to see. With a final gesture of largesse he turned once more to his audience. "V'la, mesdames, messieurs, v'la—une veritable pisserie du quartier!" With Monsieur V's observation of my appreciation of the gross pun, all obstacles to the entente cordiale between us were finally dissolved. We motored home through the soft warm night, and sat out on the verandah to sip a mirabelle before we turned in, the little friendly flags still looking down from their poles. It was inevitable that in time the talk should be of the war which was so soon to come. Monsieur V. with almost grim quietness, made the remark which we were to hear so often later—"Il faut en finir."

And now I do not know what has become of our two French friends, or what they think about it all. All that I know is that I found France more lovable for knowing them, and I would give much to be able to let them understand that I still think of them as "chers amis." You see, I am not even sure in my heart whether or not in the end they would be stampeded into the Pétain-Laval-Baudouin herd. It is possible, for Monsieur V. was disgusted with the corruption of French politics, and he delighted in *Gringoire* which week by week roasted the politicians. But *Gringoire* was a poisonous paper, devilishly effective manure for the cultivation of those modern bourgeois sins against the Holy Ghost—fear of losing possession and privileges even for the sake of justice and honour; and hardness of heart. Not that my friend had himself got that far; but evil communications corrupt good manners, and already there were plenty of chinks in his armour. He found the working-classes a nuisance, as no doubt they were—to him, as a manager and technician. He blamed the Popular Front entirely for all that was wrong in France. He had a naïve trust in Daladier as the saviour of France. No! my kindly, generous good-humoured, lovable friend was no longer himself when he passed into the world of politics; or rather he was dichotomised, a house divided against itself. I realise now, therefore, that just because I came to know him fairly intimately, I was not entirely surprised when France collapsed, and looking back I think that I catch a glimpse of some of the factors that made the collapse. All the more, then, I want him to know what I still think of him as friend, sorrowing for him and with him; for I know that whatever he might think of the Bordeaux government his real self will be heavy with shame and despair.

* * *

An old lady came into the surgery of one of my G.P. friends the other day. She wanted "a bottle"; she had been sleeping badly, her nerves were torn to ribbons, her memory was going and she could not constipate upon anything.

* * *

Going round a mental hospital in an air-raid I was interested to see how it would affect the patients. It didn't. One or two were rather annoyed at being brought in from the garden; one manic came up to me and was expansive—"I enjoy these air-raids, you know. During the last war I had lots of them. Rather exciting!"—but one gets that attitude outside mental hospitals too. The great majority of the patients were far too self-absorbed, too lost in lands beyond our know, to take the slightest notice. Here and there among the staff I noticed a certain quickness of response, an auditory alertness that followed the droning of the aeroplanes, signs that they were feeling—and controlling—a very natural fear. Would a child without fear ever grow up? I doubt it. He'd surely be drowned or killed by a motorbus. Would an adult be able to exist for any length of time without this cautionary fear? Hardly. It often strikes me that if the insane were not sheltered they would all die: the melancholics would commit suicide or die of starvation; the impulsive schizophrenics have a sort of instinct for death; manics ask for it in a hundred ways; and most paranoiacs in tribal conditions would be battered by their fed-up friends. A reasoned fear has a great survival value and anyone found wandering about in an air-raid should be looked on with suspicion.

* * *

Going round the epileptic ward I was told, "Oh, he's much quieter today, he had a fit yesterday." How often one has heard that sort of thing before, the epileptic who slowly becomes more irritable, whose behaviour deteriorates, and then comes the expected and relieving fit; and one hears too of the drug that stops the fits, but leaves the patient worse, more intractable.

A consolation for having been a rolling-stone is that one has parallels. My mind flits back to a lonely rubber-planter in Malay, cultured and socially inclined but almost completely isolated, who kept his sanity by losing it at regular intervals in gross drinking bouts; to half a dozen ship's captains and chief engineers, curiously mostly Scots who sought to evade the monotony of long runs away from home by alcoholic unconsciousness; to one sentence from a young man at a cable station in mid-Pacific, "We practically all go on the binge at times here; you've got to; it gets you down"; to that bane of expeditions, quarrelsomeness and "bloody mindedness," caused in part by long periods of celibacy, cured, at least temporarily, by large doses of alcohol. The well-known politician of the southern hemisphere who used regularly to "go native," Sherlock Holmes's cocaine, and possibly even one's ordinary night's sleep seem to fit into the picture. Just as though Nature said to her children, "This last toy I've given you, this power of thought, give it a rest from time to time, especially you who have not had it very long, and you in whom the clock-work is none too strong." Seen thus an epileptic fit is a temporary cure for an increasingly irritable condition, a symptom, protective. Yet in this hospital we are trying to stop these fits in one ward and inducing them in another. But what about that feeling of intense well-being that precedes an attack of gout? Ah, but that's metabolic. H'mph, they may both be.

IRELAND

(FROM OUR OWN CORRESPONDENT)

THE MEDICAL PROFESSION AND THE EMERGENCY

THE Irish Medical Union has offered the Government the full coöperation of its members in the present emergency, and conferences have taken place between representations of the union and the Department of Defence. Last week Mr. de Valera invited representatives of the unions to meet him in conference with representatives of the departments concerned. The Prime Minister appointed a small committee with executive powers on which Dr. Patrick MacCarvill, a past president, represents the union to deal with the provision of hospital and other medical services for civilians and for military personnel.

RICHARD VINCENT SLATTERY, F.R.C.S.I.

Mr. R. V. Slattery, who died this month, was formerly surgeon to the Richmond Hospital, Dublin. He was born in Tralee, co. Kerry, and educated at the Catholic University school of medicine in Dublin. He received his degrees from the Royal University of Ireland in 1907, and became a fellow of the Royal College of Surgeons in Ireland in 1911. After holding a resident appointment in the Mater Misericordiæ Hospital, he was, while still a young man, appointed assistant surgeon to the Richmond Hospital, where he worked under the late Sir Thornley Stoker. During the last war Mr. Slattery served overseas as a major in the R.A.M.C. and was awarded the Order of St. Sava. On his return to Dublin he was promoted to the senior staff of the Richmond, where he continued in active work until a few years ago. He was a competent general surgeon and he was equally popular with his surgical colleagues and with the profession generally. A few years ago he retired from practice and went to live in his native county of Kerry.

Letters to the Editor

TREATMENT OF WAR WOUNDS BY SULPHONAMIDE PACKS

SIR,—During the last few weeks of the fighting in France I was privileged to see something of the work done at the Pasteur Institute on the checking of bacterial growth in wounds by the local application of sulphonamide powder. This work, which is an extension of that already described by Jensen and his colleagues[1] in America and by Nitti[2] in France, was recently reported by Dr. Legroux to the Paris Academy of Surgery and published in its *Mémoires* (1940, **66**, 415).

Briefly, the experiments were as follows. The adductor magnus muscle of the guineapig's thigh was exposed and a portion of it crushed with pliers, to simulate the injury caused by projectiles. The wound was then heavily infected by inserting in it a piece of gauze impregnated with a neat culture of a hæmolytic streptococcus or of one of the gas-gangrene bacilli, *Clostridium welchii* or *Cl. histolyticum*. After thorough dusting with sulphonamide powder the wounds were sutured. In the control animals the dusting was omitted. It was found that a single application of powder delayed the development of streptococcal infections and the animals died 1½–2 days later than the controls. If the wounds were reopened and dusted a second time 1–2 days after the first (without removal of the gauze, the death of the animals was deferred for a further period of 3–5 days. These late deaths in the treated animals were associated with a fall of the sulphonamide concentration in the animals' blood to below 1 mg. per 100 c.cm. This low level was usually reached on the third day after the dusting of the wounds. In order to maintain a higher level another series of rabbits, similarly infected and powdered, was given a daily dose of sulphonamide by mouth, starting from the second or third day. These animals survived but their wounds eventually suppurated. After removal of the gauze on the twelfth day, and a further dusting, they made a complete recovery. It was clear, therefore, that even the heavy streptococcal infections employed by Legroux could be to a large extent controlled by the judicious use of sulphonamide locally and per os.

The anaerobic bacilli associated with gas gangrene are not nearly so susceptible to sulphonamide as the hæmolytic streptococci, but with these too Legroux was able to demonstrate a very definite delaying action by local treatment, and, in combination with surgery, to save the animals. The control animals died after 2–3 days; those which got a single dusting with sulphonamide died after 4–7 days. If the wounds were reopened after a day or two and dusted a second time after removal of the gauze, but without excision of the injured muscle, the animals survived—and this happened even if the infectious process had already extended to the lower part of the abdomen. If the wounds were not packed at all but sulphonamide given daily by mouth, it had little or no effect on the infections. From these experiments Legroux concluded that a high concentration of the drug in the wound itself for a short time was more effective in checking the development of the gas-gangrene organisms than a much lower concentration operating in the blood-stream over a longer period. And that was likely to be true also, he thought, for most of the other bacterial species infecting war wounds.

In his view, and that of the surgeons working with him, the circumstances of modern warfare call especially for some means of holding up events in the contaminated wound while the man is in transit to a base hospital. Our own experience of the fighting in Belgium and in France entirely supports that view. M. Legroux proposed to the French surgeons: (1) that the wounds should be thoroughly dusted with sulphonamide as early as possible, and a single dose of 2 grammes should be given by mouth at the same time to give further protection against a rapidly developing gas-gangrene infection; (2) that there should be a second dusting with sulphonamide after débridement if this was carried out many hours after the first treatment. A considerable number of French wounded had already been treated on these lines during the last month of the fighting and the results were said to be very encouraging. In the English army too quite a number of wounds were packed, but for the most part only after débridement. The necessity for rapid evacuation of hospitals made it difficult to follow up the cases, and any assessment of the results obtained must come in due course from the surgeons concerned. Such bacteriological observations as we were able to make certainly indicated that the packs did, in fact, hold up microbic growth in the wounds for several days, but that finding needs to be confirmed by further experience based on comparable series of cases, with and without packs. Such experience should include wounds packed with sulphonamide *prior to débridement* when circumstances preclude early surgical treatment; and others packed *at the time of débridement* in order to find out whether the antibacterial effect of the drug will favour primary union.

One important practical question arises. Is it feasible to distribute a powder effectively throughout a deep ragged wound prior to its surgical treatment? M. Legroux has recognised this difficulty and has devoted much time to experimentation with different types of insufflator. In the end he recommended for trial in the French army a very efficient hand-operated air pump of about 500 c.cm. capacity, mounted on a light tripod. Every stroke of the pump raises a considerable storm in a 10 oz. bottle of sulphonamide powder which is carried thence by a rubber tube to a glass nozzle inserted into the wound. This nozzle is of course easily changed for each patient. M. Legroux kindly gave me two of these pumps for use in English hospitals and they have proved very satisfactory, at any rate for dusting the wounds after débridement. Further experience is required to show how far the method will achieve its object in fresh wounds before débridement. It may well be that, even after solution in the wound exudate, the drug will not always reach bacteria lodged in the innumerable nooks and crannies to which Prof. Fleming has so often called attention. With sulphonamide, however, there should be a better chance of this difficulty being overcome than with the antiseptic agents employed hitherto, on account of its great diffusibility, and also because it is readily absorbed from the wound and acts simultaneously by way of the blood-stream.

It has been suggested that sulphonamide introduced in the form of an emulsion from a collapsible tube might perhaps find its way better into the depths of the wound. This is under investigation. M. Legroux has also recommended for tubular wounds with a small aperture the insertion of one or more sulphonamide "crayons" about 2 in. long containing 2 g. of the drug. This procedure has the advantage that the drug is more slowly absorbed—such crayons have been found only half dissolved 12 hours after insertion. In some circumstances it might prove advantageous to use crayons or pills of one of the less soluble sulphonamides—e.g., sulphapyridine or sulphathiazole—in order to prolong the bacteriostatic effect.

In conclusion may I make one point in connexion with the streptococcal infections of wounds. It is becoming more and more evident that infection by hæmolytic streptococci does not usually occur when the man is wounded but later on during his stay in hospital. For the most part these infections are attributable to transfer of the organism from patient to patient, during dressings or by dust; sometimes probably from the throat or nose of "carriers." It is certain that this cross-infection will happen to our casualties at home unless we make a determined drive to prevent it. We have a heavy responsibility to the wounded in this matter and all our efforts should be concentrated on it. Sulphonamide packs, however effective they may prove to be in holding off the primary infection, will not give protection against these late infections for the drug will have disappeared from the wound (and also from the blood-stream) after 2-4 days. Whenever there is reason to fear such infection it might be worth while to follow up the sulphonamide pack, starting on the second or third day, by administration of the drug by mouth on the lines recommended in the War Office memorandum of July 3, 1940.

Over and above this precaution there should be a constant effort to diminish the opportunities for the transfer of the streptococcus in all our hospitals where

1. Jensen, N. K., Johnsrud, L. W. and Nelson, M. C. *Surgery*, 1939, **5**, 1.
2. Nitti, F. *Bull. Acad. Méd. Paris*, 1939, **122**, 432.

war injuries are treated. To that end we should avoid the overcrowding of surgical wards; we should provide isolated facilities for streptococcus-infected cases; we should eliminate the danger of dust as far as possible by wet sweeping or treatment of floors with some oily preparation such as Florigene; we should insist on rubber gloves, masks and a more strict technique in the dressing of wounds; and finally we should secure the rapid healing of wounds by suture or skin grafting, or, when that is not feasible, uncover them as little as possible.

LEONARD COLEBROOK.

THE TIME FOR UNITY

SIR,—You must know by now that whenever you make an appeal for intelligent planning of our war effort (and your tenacity excites my warmest admiration) our dear old conservatives always turn out the guard. Sir Charles Gordon-Watson thinks that to plan things properly, whether in war or in peace, is to ape the Nazis and he warns you that the medical profession will never submit to be regimented on Nazi lines. If he were really true to the convictions he professes he would not have joined the Army again. But his views must be taken seriously, for he represents that powerful governing section of the profession whose definition of freedom is freedom to work how and where they like, and who do not consider the needs of the community paramount. This conception is as devoid of hope for the future as for the needs of the present. It is completely out of date.

H. J. SEDDON.

SIR,—Your readers who disagree with the proposals set out in your leading article are surely entitled to know what volume of medical opinion is represented by it. Is this the voice of the editor writing solely for himself or may we assume that behind it is the mind of some medical Laval in the E.M.S. using the nation's extremity to hand over his colleagues to totalitarianism? Is this a Whitehall kite or an Aylesbury duckling? The internal evidence suggests the former. The article contains much uncritical assumption such as the statements that "Doctors are largely luxuries," and that "this side of our trade will soon be gone"; it fails altogether to state the problems involved scientifically and dispassionately; and it minimises the difficulties of its wildly revolutionary proposals.

What are the nature and extent of the immediate problems? They are mainly four:—

1. To provide for the needs of the services. There is ample evidence that these needs are at present more than adequately met; if not, there are many doctors ready to serve.

2. To provide for the medical needs of the population: (*a*) In reception areas. The extent of this problem has not been stated. It cannot be acute for some months and there is no evidence that the Central Medical War Committee has not the capacity to cope with it. (*b*) As war casualties. The E.M.S. has had this organisation in its hands since September, 1939. Many of the most distinguished members of our profession in London have already made great sacrifices to ensure its efficient working. More in the provinces are prepared for sacrifice in their turn. If the care of casualties is inadequate and inefficient the nation will look for its scapegoats in Whitehall.

3. To relieve the hardships of doctors in evacuated areas. This is a liability that the profession should rightly and gladly bear. Why not a levy by the panel committees and a further levy of 5% of the income-tax paid by all doctors whose gross earnings are £1000 per annum or over? A fund of this kind administered by the central committee should be sufficient to relieve individual hardship. It will be seen that there are alternative remedies for present difficulties. It is possible that problems may arise in the immediate future which will demand "dictatorial" solution of the sort proposed by you. If so, these measures will presumably be applied by the regional commissioner concerned and they will be both local and temporary in their application.

The disastrous implications of your policy are too obvious to need much comment. It will inevitably deny to the individual the right to choose his doctor, a result which would create more public discontent than perhaps Whitehall imagines; it will mean an enormous capital loss to the medical profession, for to talk of compensation today is futile wish-thinking; it will give the Exchequer a considerable additional burden and at the same time diminish the revenue; it will inflict appalling hardship on all doctors in private practice instead of on a small fraction as at present; it will be an inexcusable breach of faith with those doctors who have already joined the Services in the knowledge that their practices would be looked after in their absence.

None of these results would be of much account if your proposed revolution would help to win the war. It is my belief that it would bring us all a little nearer to losing it. There is little doubt that, ultimately, the public interest will demand an increasing state control of both hospitals and private practice, but not at this time and in this fashion.

Fortunately, I think that you and your advisers have misread the oracles. The Government has wisely assumed totalitarian powers, but, with equal wisdom, is using them with discretion. Not yet has it conscripted capital, annexed the worker's savings, nationalised the banks and the medical profession. These things may come; they will only come if and when the public interest is shown to demand them, and not let us hope at the instance of disgruntled doctrinaires in Whitehall.

Derby. DOUGLAS HUBBLE.

SIR,—You crowded into your leader more truth about our medical services than one usually finds in such writings even in THE LANCET, but to some of us it is a matter for regret that it is only when we have reached the position of all being "in the same boat" that such truth finds public utterance. But since recriminations are frowned upon today I will say nothing of the past except to emphasise your remark that "in peace-time doctors are largely luxuries and distributed more according to the wealth than the size of the population." As we consider our immediate needs I hope we shall all resolve that such a state of affairs will never again be permitted.

From the moment the B.E.F. returned to these shores all need for separate medical services for the fighting forces and the civilians disappeared; with the rapid movement of population from the more threatened to the relatively safe areas of the country a new method of bringing into contact the sick and the medical profession was at once required. Army physicians and surgeons who might have been busy abroad but who now have little to do in country areas could well be made available for the evacuees crowding their districts. E.M.S. staff should not be kept in idleness waiting for those convoys which may never come but should be at the service of the whole population. Your plea for the compulsory enrolment of all medical men in a "unified salaried national service" cannot for long go unanswered.

But your plea must go further. If no-one else will give the lead you must make it clear that such a compulsory service cannot in time of war be saddled with machinery for separating those sick and injured who are "in the lower income-groups" from the rest of the population. War may force us all into that group and will in any case remove many inequalities; but an efficient medical service can only be built if all doctors are available to all who require them wherever they are most needed.

Nor will a service which compulsorily takes over all doctors be enough if it leaves free all the various competing agencies that work in the medical field. We have no time now for two hospital systems and no time for the varied schemes that exist to assist in the payment for medical service. As the Government can and will make us pay for the national effort now called for, let us save time and money by freeing medical service from the hampering shackles of fees, assessments and charity.

There are already some of us who have been taken over by the Government without any compensation for "loss of capital invested in their practices" and many others have by movements of population suffered almost complete loss. You do not, however, bring this problem nearer solution by advocating a service "for the duration." Surely the best form of compensation would be for the state, in taking over the profession, to place the new system on a permanent footing and offer that

compensation in the form of pensions such as are available to all other civil servants.

Whatever the difficulties I agree they should not be allowed to stand in the way of an immediate and complete mobilisation of our profession in the service of our country.

Richmond, Surrey. D. STARK MURRAY.

SIR,—The same euphoria that some months ago dubbed a reforming member of your editorial staff "THE LANCET Special Commissioner" seems to have dictated the title of your leading article "The Time for Unity." It is plain enough that its proper title, "The Time for Uniformity," would have lacked the emotional appeal the present misnomer may have for the unwary reader. It might, also, have revealed too clearly that pink and woolly intellectualism that seems to have coloured THE LANCET'S editorials since it took refuge amongst the green fields of Buckinghamshire. Yet though I disapprove I can still give my tribute of admiration to the skill that disguises a political obsession beneath a patriotic slogan.

The operative sentence in the article appears to be the proposition that "in peace-time doctors are largely luxuries." One need not be a wholly gullible reader of the dithyrambic periods that characterise the editorial of each summer's Educational Number, wherein we are annually assured that ours is a noble profession, a pillar of the community, a life of service, and so on, to find this bald statement a perversion of the facts, and an odd commentary upon the changing moods in which editorial articles are composed. However, let us face our situation. It may be that there are aspects of our corporate activity that under stress of war conditions may justly be described as luxuries. We are giving up our luxuries. We have handed over our aluminium pots and pans, we drink less tea, use less petrol and eat less sugar. What about giving up editorials in our medical journals for the duration? I make the suggestion with all deference, but I believe we could survive without them.

Portland Place, W.1. F. M. R. WALSHE.

PLASTER

SIR,—Prof. Pannett asks for "simple instructions" in the use of plaster of Paris and a description of our methods of solving "the multiple minor problems of plaster technique." I hope to contribute an article on the subject in an early issue.

Oxford. G. R. GIRDLESTONE.

SIR,—In your leader of July 13 emphasis is rightly laid on the great importance of adequate and efficient plaster teams to deal with war injuries. On another page of the same issue Prof. Girdlestone stresses the same point and urges that plaster should be applied by workers of skill in this important branch of the "closed" method of treatment.

The advice in your leader that dental officers should be in charge of the plaster team is surely a counsel of makeshift. You say ". . . and they would soon acquire the technique of the plaster table and the spica." How can a dental officer who has no training or experience in the Winnett Orr or Trueta methods, and who is without orthopædic training, be expected to deal efficiently with this type of work? The suggestion that he can do so, or should be expected to do so, is futile and shows a regrettable ignorance of the type of worker required, and it is grossly unfair to the wounded man that his treatment should be left in such unskilled hands. There are many young men in the Services who have spent periods of training in orthopædic and fracture clinics, and who had intended to take up this special branch of surgery. These men are obviously familar with plaster technique and with the orthopædic principles to be observed in the treatment of war wounds by modern accepted methods. No doubt they would gladly welcome the opportunity of putting their knowledge and experience to practical use. There is, moreover, a considerable number of women who have been trained as orthopædic nurses and who have qualified in physiotherapy at the large orthopædic centres, such as Oswestry, and many of these women have had wide experience in all forms of plaster work and splinting in large fracture clinics. Unfortunately, unless they are state registered nurses, no employment can be found for them in the present emergency. This is an anomaly of the first magnitude which cries out for rectification. Employment should be offered to women with these qualifications as plaster workers in military hospitals and emergency centres. Their employment in this sphere would be far more fruitful than their work as members of the massage corps.

There is no problem about who will do the plaster work after the harassed surgeon has done his share. The young men and women experienced in this type of work are ready and willing to take up this work. It is our duty to see that the injured and wounded get prompt and skilled treatment from properly manned surgical teams. The dentist has no more part in these teams than the house plasterer.

Manchester. HENRY POSTON.

SIR,—What Professor Pannett calls the reticence of orthopædic surgeons in not explaining to general surgeons how to apply a plaster spica or "the solution of multiple minor problems of plaster technique" can, if his suggestion is correct, be attributed to two factors: first, the general difficulty of putting into words an ordinary process of craftsmanship without being excessively boring, and secondly it is assumed that the technique can be readily acquired through demonstration. If Professor Pannett, with his 2000-bed war hospital, is not availing himself of the services of an orthopædic surgeon who can teach this technique, that is an omission which can be remedied. There must be several orthopædic surgeons and many registrars who, even if their energies were being fully occupied at present, would feel that the opportunity of being the only surgeon of any orthopædic experience in such a large unit should be eagerly accepted, if necessary at the expense of some less important appointment.

Upper Wimpole Street, W.1. B. H. BURNS.

SOLDIER'S DOCTOR

SIR,—Preceding letters on this subject resolve themselves into alternative interpretations. The Layton-Pertinax Axis appears to believe that neurosis can be cured by the application of discipline, to the benefit of the state. This is as ridiculous as to suggest that true neurosis can be induced by the application of modern methods of diagnosis. The other interpretation is that the majority of sick soldiers are malingering. This attitude of mind is apt to lead to serious consequences, not only to the soldier but the state, in the greater number of cases. Scientific methods are almost the only means of differentiation between the functional and organic lesions, except for those possessed of uncanny diagnostic skill.

M. J. HARKER,
C. H. ST. JOHNSTON,
Denbigh. S. A. MADDOCKS.

SIR,—As a civilian surgeon and Territorial officer, now employed in a specialist capacity in the R.A.M.C., and as one who has had more than ten years' happy experience as a regimental medical officer in war and peace, I should like to refute practically all of Dr. Leigh's statements, which are an insult to the British soldier. It is original of Dr. Leigh to present rupture, varicose veins and blistered feet (to cite three of his classified diseases), as evidence of the malingerer. It would be interesting to observe the clinical state of this gentleman after a route march in full kit, if suffering from any of these conditions. His letter implies that a medical officer, with all the attributes of Himmler and Streicher, is required to control the mob of leadswingers who constantly besiege his M.I. room in order to evade duty. Of course, the old Army sport of "trying it on" the new M.O. continues to be enjoyed by the British soldier when an unpleasant or boring job of work is on his programme. Every M.O. worth his salt knows all about it and how to deal with it, and indeed rather enjoys his own part in the game. It is very obvious from Dr. Leigh's letter that he has never experienced active service or he would be aware that, when there is fighting to be done, the numbers on the sick parade are reduced to nil. It would be a splendid thing for the Army if every medical officer did his duty equally as well as the average private soldier.

CYRIL F. MAYNE.

SOIL FERTILITY AND HUMUS

SIR,—I have read with interest your leading article, June 1st, annotation, June 22nd, and Sir Albert Howard's letter this week of hydroponics, soil fertility and humus. The modern and successful practice of steam sterilisation of soil, largely used in glasshouse culture, must destroy much of the fungus bridge between root and humus. Other factors must therefore be concerned. Two years ago I saw in the same commercial glasshouse tomato plants growing in water culture alongside plants of the same series growing in steam-sterilised soil. The latter were twice the height of the former and the quality and quantity of their fruit was incomparably better. The two methods and the results were demonstrated to me by my brother (P. H. W.), a research worker in virus diseases, at the Cheshunt research station where the subject was being studied. He informed me that steam sterilisation appeared to increase the availability of nitrogen in the soil. Much work must be done before we understand the function of humus although the effect of using rotted vegetable matter appears self-evident in my garden vegetable crop this year after a severe winter.

Harley Street, W.1. PEARSE WILLIAMS.

Obituary

ROBERT WILLIAM MURRAY

O.B.E., F.R.C.S.

Mr. R. W. Murray who died on July 14 at Cheltenham, had settled in Gloucestershire in 1919 when he gave up his surgical practice in Liverpool. He qualified from Guy's Hospital in 1885 and took the fellowship in 1889. He held a clinical assistantship at Guy's, but house-appointments at Pendlebury and at the Liverpool Children's Infirmary soon brought him to what was to be his life's work. Acting on the principle that every man has his limitations and that a wise man keeps well within them he early chose for himself certain surgical procedures in which he took pains to make himself expert. Harelip, cleft palate, hernia in the child and adult were his chosen ground and he published several papers on these subjects. A colleague who first met him in 1898 when he was surgeon to the children's infirmary writes: "When Murray became surgeon to the Northern Hospital he kept his preference for the surgery of childhood. Apart from his affection for children, this was because he belonged to the surgical generation, then still young, which put finish and delicacy of work before pace and vigour. He had a great respect for texture, and the delicacy of child texture appealed to him." Murray retired in 1914 but the last war brought him back to work and he remained till 1919 at the 1st Western General Hospital, where it seems that he was the commanding influence without ever giving a command. After his retirement he seldom visited Liverpool but many will remember how welcome he used to be in hospital, committee, or club, for undisturbed by ambition Murray was a good team man and would work with anyone to achieve something that needed doing.

GEORGE PERCY NORMAN

M.D. EDIN.

Dr. G. P. Norman, who died at Eastbourne on July 8, graduated M.B. at Edinburgh in 1905. He was house-surgeon at the Royal Northern Hospital, London, resident medical officer at the Queen's Hospital for Children, Hackney, and senior house-surgeon at the Norfolk and Norwich County Hospital. In 1909 he obtained his M.D. and started practice in Oldham. From 1916–18 he served with the R.A.M.C. in Salonika. His growing interest in radiology was reflected in his appointment as radiologist to Oldham Royal Infirmary, and in 1922 he moved to Eastbourne, where he practised as a radiologist until his death; he was made honorary radiologist to the Princess Alice Hospital in 1923 and was also consulting radiologist to St. Mary's Hospital and the Leaf Hospital. He took a keen interest in the Institute of Radiology, of which he was a member, and also in the medical life of Eastbourne. He leaves a widow, a son, Dr. A. P. Norman, and a daughter.

A colleague writes: Dr. Norman's experience in general practice and his shrewd observation and common sense helped him in his radiological work. He understood the patient as well as the radiogram. He was always smiling and patient, with a keen sense of humour and unvaried calm. He loved his home and his profession and he upheld the highest ideals of each.

JAMES MORRISSEY

M.B. LPOOL, D.R.C.O.G.; MAJOR, R.A.M.C.

THE name of Major James Morrissey appeared some time ago in the list of missing. His death in action has now been reported.

Dr. Morrissey was educated at Ampleforth College and Liverpool University, where he graduated M.B. in 1925. After holding resident appointments in Liverpool at the Royal Southern Hospital and at the Smithdown Road Institute he went into practice in Bradford. In 1935 while studying for the D.R.C.O.G. he spent some time at the National Maternity Hospital, Dublin. Dr. Morrissey was hon. surgeon to the Bradford Special Constabulary. Since his Ampleforth days he took a practical interest in boxing and he was medical officer to the Yorkshire Amateur Boxing Association. He was a keen sportsman and had played rugger for Liverpool University. Before the war he held the rank of captain in the Territorials. He was promoted major on the field.

Dr. Morrissey leaves a widow and four young children.

IVOR REES DAVIES

M.B. LOND., LIEUTENANT, R.A.M.C.

Ivor Rees Davies, who was fatally injured on July 8 while under instruction on a motor-cycle, was the eldest son of Dr. H. Rees Davies of Whyteleaf, Surrey. He was born in 1915, and educated at Eastbourne College. He played rugger, boxed, and was awarded his full shooting colours, and shot in the Ashburton competition of 1932. He qualified M.R.C.S. in 1939 from St. Bartholomew's Hospital where he afterwards held the appointments of casualty medical officer and senior house-physician. In February he was granted a commission in the R.A.M.C., and in May he obtained the M.B. Lond.

Lieut. Rees Davies married last February Cicely Mary Stavert of Battle, Sussex.

Infectious Disease in England and Wales

DURING THE WEEK ENDED JULY 6, 1940

Notifications.—The following cases of infectious disease were notified during the week: smallpox, 0; scarlet fever, 1128; whooping-cough, 807; diphtheria, 718; enteric fever, 108; measles (excluding rubella), 9166; pneumonia (primary or influenzal), 441; puerperal pyrexia, 136; cerebrospinal fever, 178; poliomyelitis, 18; polio-encephalitis, 1; encephalitis lethargica, 3; dysentery, 34; ophthalmia neonatorum, 96. No case of cholera, plague or typhus fever was notified during the week.

The number of civilian and service sick in the Infectious Hospitals of the London County Council on July 5 was 624, made up of: scarlet fever, 102; diphtheria, 127; measles, 19; whooping-cough, 19; enteritis, 47; chicken-pox, 16; erysipelas, 22; mumps, 20; poliomyelitis, 1; dysentery, 1; cerebrospinal fever, 51; puerperal sepsis, 31; enteric fevers, 29; german measles, 4; other diseases (non-infectious), 56; not yet diagnosed, 79.

Deaths.—In 126 great towns, including London, there was no death from smallpox, 2 (0) from scarlet fever, 4 (0) from whooping-cough, 5 (0) from measles, 23 (0) from diphtheria, 36 (8) from diarrhœa and enteritis under 2 years, and 11 (0) from influenza. The figures in parentheses are those for London itself.

Greater London reported a fatal case of enteric fever. There were 3 deaths from diphtheria at Plymouth. Birmingham reported 4 deaths from diarrhœa, Birkenhead and Liverpool each 3.

Parliament

FROM THE PRESS GALLERY

Another Supplementary Budget

Sir KINGSLEY WOOD began his speech introducing the third war budget on July 23 by telling the House that our expenditure had now risen to £57 million a week, and might well rise further this year, the provisional estimate in the April budget having been £40 million a week. The excess of expenditure over revenue for the full year was likely to be some £2200 million. This formidable gap was, he said, not so alarming as it looked. We could meet our expenditure overseas by disposing of our gold and our foreign securities, and by allowing part of what we are paying for Dominion products to accumulate as balances or short-term investments in this country. He explained that one effect of the rise in Government spending was to raise the total gross income of our people, whereas there was a reduced and diminishing supply of goods on which these larger incomes could be spent, for the claims of the export trade must come first. The best way of equalising demand and production was to divert the excess of income to the state either by taxation or by loans, while drastically cutting down non-essential personal expenditure. Having made it clear that this budget must be regarded as an interim one, the Chancellor disclosed his proposals. The standard rate of income-tax was to be raised from April's 7*s.* 6*d.* to 8*s.* 6*d.*, and the tax on the first £165 of taxable income from half rate to 5*s.* in the pound. Surtax was to be raised from 1*s.* 3*d.* to 2*s.* in the pound on the first slice of income over £2000, and the effect of the changes would be to graduate income-tax to a peak of 18*s.* in the pound at £20,000 a year. Income-tax on salaries and wages was to be deducted at source by employers, so as to spread the burden evenly throughout the year. Increases in indirect taxes would include another penny a pint on beer, three-halfpence an ounce on tobacco, and 2*s.* a gallon on light and 4*s.* on heavy wines, the Empire preferences on tobacco and wines being retained. The Purchase Tax proposed in April was to be withdrawn and its place would be taken by a tax of a third of the wholesale price on non-essentials such as furs, china and glassware, cosmetics and furniture, and a sixth of the wholesale price on articles such as clothing (other than children's), domestic crockery, medicines, and newspapers, periodicals and books. Certain essential medical appliances and drugs, which the Chancellor did not specify, were to be exempted from the tax. Mr. Kingsley Wood estimated that some 80% of the average household expenditure would not fall within his new tax, and a further 12% would only come under the half rate. He expected to be ready to apply the tax within a month or two. Altogether the new provisions of the budget would provide £239 million in a full year.

Fortifying the National Diet

In the House of Commons on July 18 Mr. BOOTHBY, parliamentary secretary to the Ministry of Food, made a statement on war-time food policy, in which he said that the Government's aim was to secure the maximum possible imports of essential foodstuffs, part of which must be used to build up stocks. They were confident that the arrangement made for distribution in an emergency would stand the test. The important scheme introduced at the beginning of this month for the supply of cheap milk for expectant and nursing mothers and children under school age would cost £7,500,000 per annum. It was hoped some time to extend the milk-in-schools scheme so that every child in the country from birth to adolescence would be able to obtain a liberal supply. A committee had been appointed to examine the question. Nutrition experts had stressed the importance of wholemeal as compared with white bread. The Government had not suspended the manufacture of white flour, first because the great majority of consumers much preferred white bread, and secondly because its keeping qualities were definitely greater than those of wholemeal flour. To overcome the objection that white flour was lacking in vitamin content it had been decided to fortify it with vitamin B_1. In addition it was intended to introduce into the loaf a small portion of calcium salt. It would take some months before there was a sufficient supply of B_1 to fortify the entire bread supply of this country, but the public would then be given a choice of fortified white bread or wholemeal bread at the same price. This was an unprecedented and indeed a revolutionary step, and would certainly attract world-wide attention. In conjunction with the national milk scheme it would lay the foundations of a nutrition policy which would have a permanently beneficial effect on the health of our people and would be haled by scientists everywhere as a great advance. The decision to fortify white bread was taken by the Minister of Food and the Government after receiving a report from the Scientific Food Committee under the chairmanship of Sir William Bragg, the president of the Royal Society. It was a great satisfaction to the Ministry that their import policy had been largely endorsed by the Scientific Food Committee, but he hoped that the recent successes in the field of nutrition would not go to the heads of the scientists. The Ministry proposed to extend communal feeding where desirable and practicable, and they were beginning with the factory workers. They were not cranks at the Ministry of Food. Their "kitchen-front" campaign for simpler food and simpler cooking was not a scientific stunt, it was plain common sense.

In the debate that followed Sir LEONARD LYLE said that when he saw some of the instructions issued and quoted as coming from the highest dietetic authorities he was not impressed, because he knew that he could easily get another set of scientists and doctors to give an entirely different picture.—Mr. BANFIELD, speaking as a practical baker, agreed that it would be better if more of the nutriment were left in the wheat, but there was a lot of difference between that and putting people on wholemeal bread. Wholemeal bread had a very high water content, and there was no particular nutriment in water.

Sir ERNEST GRAHAM-LITTLE referred to the successful results which had followed the adoption of a dietetic plan drawn up by a committee of physiologists during the last war. It was proved by statistics that the health of the nation was better during the last part of the Great War and in the period that followed because of that particular dietary than it had ever been before. It was in the opinion of many experts a misfortune that that dietary was not made permanent. He did not think that any other country would have neglected an experiment of such proved success. Vitamin B was a most important ingredient in the dietary of a great community. Its deficiency led to definite nervous diseases and also to more evasive symptoms. It led to a general lassitude, absence of initiative, and the kind of mood which might be summed up as "defeatism." Experts ascribed a large part of the cause of the collapse of Germany in 1918 to the absence of vitamin B from their dietary. The Germans then had a dietary not nearly so scientific or effective as ours, but their present dietary was more scientific and effective than ours. He urged the Ministry of Food to give some thought to what had been done by the scientific experiments of 1917, the success of which had been indisputably proved.

Dr. EDITH SUMMERSKILL urged that children up to twelve years at least should be allowed free or cheap milk and that steps should be taken to ensure that the milk supplied was clean and not tubercular-infected. Mr. GEORGE GRIFFITHS complained that although his doctor had said that he (Mr. Griffiths) required two ounces of butter a day as a diabetic he was only able to get four ounces a week. He put in a plea for a more sympathetic consideration of invalids whose medical advisers had prescribed extra diet as necessary for their health.

Replying to the debate Mr. BOOTHBY said that the Government had decided to make the maximum use of the pasteurising plant of the country. The general question of the quality of the milk supply was under continuous examination. The effect upon invalids of the extension of the rationing scheme to margarine and cooking fats was being considered by the Nutrition Sub-committee of the Medical Research Council who were expected to tender their advice to the Government in the near future. Meanwhile he was advised that vitaminised margarine was an adequate substitute for butter in these cases and there was no evidence to show that it could not be digested as well as butter.

Physical Training

In the House of Lords on July 17 Viscount SAMUEL called attention to the importance of proper physical education of all kinds, not only for the armed forces. Sometime ago, he said, a national fitness campaign was started with great vigour and energy, but suddenly it seemed to fade away. Much had been done in various directions, and the health of the people as a whole had undoubtedly improved, but this achievement was inadequate. He was informed that fully 60% of our boys and girls were untouched by any of the youth movements. Under the conditions of war there was a special need for such activities. The vast movement in operation in Germany was producing a generation of young people of remarkable physical capacities, though it was open to criticism in many respects. It was surely our task to imitate what was good and to avoid what was bad in the highly developed German system.

Viscount DAWSON OF PENN said good nutrition and physical education must go hand in hand. He thought nutrition in this country was going steadily forward; those who were unable to buy proper food were less numerous than they were. Malnutrition was not always the result of inability to get food; it was also partly due to the fact that those who had to handle the food did not know how to choose or how to cook it. The fact that a large proportion of the youth of this country did not possess the structure and strength of body to which they were entitled, and of which they were capable, was brought out by a contrast between our young men fighting in the air and on the sea and many of those employed in industry. In the first case the young men were selectively trained, they could indulge in their own individuality, and they were all within the compass of a common discipline. On the other hand large numbers of youths in industry had bodies lacking shape and vigour and minds lacking aim and purpose. It had been proved that if youths in this second category were put into camps for a few months they gained in height, weight and chest measurement. These results showed that there was something lacking in our educational system that did not produce them every day. The reason why physical education in this country had been so long neglected was because of the fallacy, obstinately held for generations, that while it was necessary to educate a youth's mind it was not necessary to educate his body. It was remarkable that we had not been moved to firm action much sooner, and that we had this tremendous leeway to make up. The fact that our girls had better posture, better carriage, and on the whole better shape than the majority of our boys of the same age was partly due to the superiority of the girls' training colleges. The good side of the picture with regard to physical training was the progressive system provided by the Board of Education in the schools; but everything was brought to a standstill at the critical age of fourteen. After that age the adolescents were left to drift, with the result that their bodies deteriorated. That was the very period that the Germans had made it their business specially to study. Prompt action was necessary, and he urged the appointment of a director or commissioner of physical training with full, and, if needful, compulsory powers to direct physical training from fourteen years of age upwards. He must be a man possessed of specialised knowledge of physical training and recreation in all branches and also of administration. He should have a small staff, but there must be no cumbrous committees. In the earlier years this physical training would be based on the Board of Education and persuasion rather than compulsion should be used as far as possible. When the youths reached eighteen, physical training would be based on the War Office in coöperation with the other fighting services. During the whole of this physical training no doubt supplementary feeding would be necessary, and milk was a solution of that problem. With such a system our youth would find strength and purpose. Their industrial production would benefit and the time necessary to train them as recruits would be considerably lessened. As an immediate beginning he suggested that 100 youths might be selected from existing organisations and seconded for two months training as leaders. That would give the new director two months to mature his plans.

After further debate, Viscount CLIFDEN, replying for the Government, said that while it could not be denied that deterioration did exist during the interval between a boy leaving school and joining the Army, too much emphasis should not be laid on that deterioration. The results of medical boards for the Army in the present war were striking testimony to the beneficial results of improved physical training in the last twenty years. The problem of the gap from fourteen to eighteen would have been solved years ago had the country had the foresight to put into force the day continuation-school section of the Fisher Education Act. It was not easy in the middle of a war to repair the omissions of so many years of peace. But that did not mean that nothing had been done. The outbreak of war had necessitated the modification of plans which were being made for concentrating on the needs of youth. At the same time, an effort was being made, in close coöperation with the local education authorities and voluntary bodies, to secure a substantial increase in the provision of facilities for physical training and recreation. There were approximately 3,000,000 boys and girls between fourteen and eighteen in England and Wales. Of these rather fewer than 500,000 were in full-time education, including physical training. Of the remaining 2,500,000 rather less than 500,000 attended part-time classes, and a great many of these got some physical education, although the conditions were not by any means always satisfactory. There remained therefore upwards of 2,000,000 boys and girls to be dealt with in any national scheme of physical training. The problem of finding instructors and premises for this large number would be serious; moreover it would not be possible to release young people from factories during working hours without dislocating the factory organisation. In these circumstances it was difficult to see how any compulsory scheme of training, even if it were desirable, could work effectively. He agreed that they could not ignore the need for stimulating the enthusiasm of young people and of harnessing it in some way to the national effort. The encouragement given through the youth movement during the last nine months had already resulted in a considerable increase in the membership of youth organisations; but it was still true that considerably less than half of the young people were getting any regular physical recreation. He was sure that the President of the Board of Education and the Secretary of State for War would take note of Lord Dawson's proposals.

Referring to nutrition Lord Clifden said that on March 1 last 2,000,000 children out of the 4,000,000 in the schools were receiving milk free or at a reduced cost. Some 9% of all children in the schools were getting milk free and meals were given where necessary The Board of Education had the whole question of nutrition in the schools under active consideration, and in the next week or so a full review of the situation might be expected, with suggestions for better meals and the provision of milk for the duration of the war.

Summing up, Lord Clifden said that the Minister of Labour had set up an organisation for dealing with the welfare of factory employees in their leisure time, and all the large voluntary organisations had agreed, as a war-time measure, to open their doors to all comers without any test or conditions. This would enable young people to attend classes in physical training, first-aid, and so forth. A scheme had also been launched by the Central Council of Recreative Physical Training and the Football Association to provide physical training for boys and men from sixteen upwards in preparation for national service. This scheme had the full support of the Board of Education and the War Office.

The Workmen's Compensation (Supplementary Allowances) Bill was read a second time in the House of Commons on July 18.

QUESTION TIME

Review of Emergency Medical Service

Dr. A. B. HOWITT asked the Minister of Health whether Mr. Colville and those associated with him had now completed their review of the emergency hospital arrangements in each civil defence region, and with what result.—Mr. M. MACDONALD replied: Mr. Colville and his colleagues, Mr. Rock Carling and the principal supply officer of my depart-

ment, have completed their investigations in all the regions except London. They have reported to me that, in their view, the general plan of the emergency hospital scheme is sound and that subject to certain minor defects which are inevitable in the first operations of a new organisation, it has met in an efficient manner the calls so far made upon it. They have, however, recommended a number of modifications in the machine—such as a considerable further measure of decentralisation—all of which I have adopted. Mr. Colville has now taken up a military appointment and Lord Chatfield has agreed to head the commission in their review of the Emergency Medical Service in London.

Inspection of First-aid Posts

Mr. T. E. GROVES asked the Minister whether he would give the names and ranks of the assistant hospital officers appointed by him to inspect first-aid posts, and state what experience they had had of modern air-raid casualties.—Mr. MACDONALD replied: The names of the assistant hospital officers whose duties include the inspection of first-aid posts are as follows: Colonel G. S. Wallace, M.B., Dr. O. F. H. Atkey, Lieut.-Colonel S. W. Jones, M.R.C.S., I.M.S. (retd.), Dr. P. J. Delahunty, Lieut.-Colonel C. M. Plumptre, F.R.C.S.E., Flight-Lieutenant T. A. G. Hudson, L.R.C.P., Dr. H. N. Garrus, Dr. H. S. Beadles, Lieut.-Colonel R. T. Wells, F.R.C.S.E., Lieut.-Colonel E. S. Goss, M.R.C.S., Dr. O. A. Beaumont, and Mr. W. C. Bentall, F.R.C.S.E.

Travel Permits for Hospital Staffs

Miss F. HORSBRUGH, Parliamentary Secretary to the Ministry of Health, in answer to a question said: Medical practitioners on the staffs of hospitals are being supplied with certificates of employment which will facilitate their movement. The question of any necessary extension of this system is under consideration.

Inoculation against Typhoid Fever

Mr. ROBERT GIBSON asked the Secretary of State for Scotland whether, in view of possible breakdown of provisions for sanitation in local areas, he would consider taking steps to have the whole population inoculated against typhoid fever; and if he had any statement to make on the subject.—Mr. E. BROWN replied: I do not think that inoculation of the whole population against typhoid fever is practicable or advisable. Facilities are available for anti-typhoid inoculation where required. Mr. GIBSON: Is it not the usual practice in the Army? Can you suggest any alternative method of protection against typhoid?—Mr. BROWN: There is a number of methods. There is a considerable quantity of typhoid and paratyphoid vaccine now held at several centres in Scotland, and this can quickly be made available in any region where there is special risk. The local authorities are aware of these reserves.

Scientific Food Committee

Mr. R. R. STOKES asked the Parliamentary Secretary to the Ministry of Food when the report of the Scientific Committee on Nutrition appointed by his department, would be published; and, if the whole report was not yet completed, whether he would make immediately available to members of the House that section of it which dealt with bread.—Mr. R. BOOTHBY replied: The Scientific Food Committee was appointed by the Lord Privy Seal, as chairman of the food policy committee of the War Cabinet. Its function is to advise the food policy committee and it is not intended to publish the reports which may be submitted from time to time.

Alien Doctors Practising in Britain

Mr. A. DENVILLE asked the Home Secretary the number of alien doctors now allowed to practice in Great Britain; and how many were in practice near places at which national war work was being done.—Sir JOHN ANDERSON replied: The number of alien doctors of all nationalities who are entitled to practise in Great Britain is 460. In reply to the second part of the question, I can only say that very few people in this country can now reside far from a place at which work in connexion with the war is being carried on.

Supplies of Saccharin

Sir ROBERT GOWER asked the Parliamentary Secretary to the Ministry of Food whether he was aware that, owing to import restrictions, the manufacture and distribution of saccharin in this country was virtually a monopoly; and what steps he was taking in the public interest to secure equitable distribution of the available saccharin.—Mr. BOOTHBY replied: I am aware that the import of saccharin, except under licence, is prohibited. Imports, however, before the war, constituted only a small proportion of the total consumption. The distribution of saccharin to the various classes of user is kept constantly under review.

Medical Board Panels

Mr. GROVES asked the Minister of Labour whether he would arrange that doctors from evacuated towns were given special opportunities to undertake medical board work—Mr. ERNEST BEVIN replied: Members of panels of medical boards are drawn from lists maintained by the Central Medical War Committee. I understand that doctors from evacuated towns are able to submit their names to the appropriate local medical war committee for inclusion in the list for the district to which they have moved.

Decisions of Silicosis Board

Mr. G. TOMLINSON asked the Home Secretary whether there was any provision for an appeal against a decision of the Silicosis Board where there was a conflict of evidence between the board's medical advisers and that of other medical experts; and, if not, would he consider the advisability of making such provision at an early date.—Mr. O. PEAKE, Under Secretary, Home Office, replied: There is no provision for appeal. The members of the board have unrivalled experience in the diagnosis of silicosis and I fail to see what better final authority one could have.

Medical Officers of Health

Mr. A. DENVILLE asked the Minister of Health if he would state the number of medical officers of health who were over 70 years of age; and whether any of such medical officers were in charge of the medical air-raid precautions arrangements.—Mr. MACDONALD replied: Of a total number of over one thousand medical officers of health in England and Wales approximately eighty-three are over seventy years of age. I am unable to say without special inquiry how many of these, if any, are in charge of any medical air-raid precautions arrangements.

Births, Marriages and Deaths

BIRTHS

BAYNES.—On July 15, in Hertfordshire, the wife of Dr. Trevor L. S. Baynes—a daughter.
COCHEMÉ.—On July 17, the wife of Dr. M. A. X. Cochemé, of Longridge Road, S.W.5—a daughter.
HARVEY.—On July 18, at Torquay, the wife of Flight-Lieutenant H. F. Harvey, M.D., R.A.F.—a son.
LEWIS.—On July 16, at Llwyngoleu, Gellygaer, Glamorgan, the wife of Dr. J. E. Lewis, of Jersey—a son.
WATERS.—On July 20, the wife of Major H. S. Waters, F.R.C.S., I.M.S., of Poona—a son.

MARRIAGES

LE VAY—COLE.—On July 6, A. David Le Vay, F.R.C.S., to Marjorie Cole, M.B.
MURRAY—GAUVAIN.—On July 20, at Chelsea Old Church, Ronald Ormiston Murray, M.B., Captain R.A.M.C., to Suzette, only child of Sir Henry Gauvain, F.R.C.S.
WHITTAKER—WEBB.—On July 12, at Addington Church, Surrey, Duncan Whittaker, M.R.C.S., to Erica Webb.

DEATHS

BRUNSKILL.—On July 21, John Handfield Brunskill, D.S.O., O.B.E., M.B. Dubl., Lieut.-Colonel R.A.M.C. (retd.).
EMLYN.—On July 19, in Oxford, Charles Willmore Emlyn, M.R.C.S., aged 78.
FOX.—On July 12, at Falmouth, Hereward Evelyn Croker Fox, M.B. Lond.
HEATH.—On July 20, at Weymouth, Francis Harold Rodier Heath, M.R.C.S., aged 65.
LEY.—On July 16, at Chilbolton, Hants, Bernard Ley, M.R.C.S., late of Ashburn Place, S.W.7.
MENTON.—On July 21, at Little Haywood, near Stafford, John Menton, L.R.C.P.I., aged 54.
PETHERICK.—On July 15, at Littleham Cross, Exmouth, Wallace Petherick, M.B.E., M.R.C.S., late of Hopton, Suffolk, aged 82.
POTTS.—Died on active service, Thomas Henry Ingram Potts, M.R.C.S., Lieutenant R.A.M.C.

Mr. Somerville Hastings, the president, will take the chair at a meeting of the Socialist Medical Association, which is to be held at 8 P.M. on Friday, August 2, at the Small Conway Hall, Red Lion Square, London, W.C.1. Dr. G. B. Shirlaw and Dr. K. Sinclair Loutit will open a discussion on the casualty services.

Medical News

University of Oxford

On July 13 the following degrees were conferred:

B.M.—Frank Hampson, R. M. Hugo, G. L. L. Reynolds, J. W. Smith, P. L. Krohn, E. O. Williams, A. W. W. B. Woods, E. G. W. Clarke, P. R. Cooper, J. C. W. Hopkyns, G. W. E. Walker, J. C. Hawks, P. B. Spilsbury, George Swift, R. G. Thomas, S. C. Dobson, A. J. F. Eberle, J. E. Sharpley, F. J. S. Chapman, W. J. Tyson, M. G. Simmons, A. J. Smith, W. E. Alderson, Eleanor A. Chalk, Eleanor J. Herrin, *G. J. W. Ollerenshaw, *J. R. O'Brien and *C. B. Grimaldi.

*In absence.

University of Cambridge

At recent examinations the following candidates were successful:—

D.M.R.E.

Part II.—J. C. Davidson, J. L. Feuchtwanger, J. L. Freer, J. J. Hurley, John Lumb, and James Malin.

University of London

At recent examinations the following were successful:—

M.S.

Branch I: Surgery.—L. E. Jones, St. Thomas's.

D.M.R.

G. A. Macadie, Esmond Millington, W. J. Rees, M. A. Stewart, and T. A. Watson.

Mr. T. B. Layton and Dr. Douglas McClean have been elected to represent medicine on the standing committee of convocation. Dame Louise McIlroy is one of the representatives for science.

University of Edinburgh

At a graduation on July 17 the address to the new graduates was delivered by Prof. J. C. Brash. The following degrees and diplomas were conferred:—

M.D.—*W. E. Baumann, †K. N. A. Herdman, ‡T. A. H. Munro, ‡R. L. de C. H. Saunders, and G. F. F. Sinclair (all in absentia); ‡J. F. Birrell, Georgina M. H. Somerville, ‡David Stevenson, Marguerite Stewart, H. P. Tait, *Scott Thomson, and Andrew Watt.

* Gold medallist. † Highly commended. ‡ Commended.

M.B., Ch.B.—Eustace Akwei, J. T. Aldren, H. C. Allan, J. C. Andrews, G. A. W. Angus, *G. H. Armitage, T. G. Band, A. K. Bannister, I. R. C. Batchelor, R. W. Black, M. D. F. Bowen, D. C. B. Bramwell, J. H. F. Brotherston, L. R. Brown, J. G. Burgess, J. D. Byrne, F. R. M. Calder, G. A. S. Carmichael, Cecilia F. G. Chadwick, A. M. Christie, A. C. Craig, Morris Cram, Margaret C. Crerar, J. D. Crulkshank, R. H. Cuthbert, W. B. Dawson, George Dempster, G. F. H. Drayson, R. G. Drummond, Lois V. Dunn, Frances M. Earle, Mahlo J. Ellis (in absentia), H. V. L. Finlay, M. D. L. Finlay, C. W. Fleischmann, Margery E. Forrest, Alexander Franklin, H. R. L. Fraser, C. E. Friskney, C. C. Gardner, I. W. S. Gibb, G. A. F. R. Gibson, I. E. W. Gilmour, D. H. Girdwood, L. S. Glass, Jessie M. L. Goodbrand, N. S. Gordon, J. R. Gray, E. G. Hales, A. C. Hamer, T. B. Harrison, R. W. S. Harvey, Alexander Henderson, N. W. Horne, H. D. Hunter, Helen M. Innes, D. J. M'I. Irvine, J. W. Jackson, Margaret E. Jackson, James Johnston, G. H. Kilgour, Margaret S. B. Langton, Abraham Lawrence, William Leckie, D. H. Le Messurier (in absentia), Lewis Lloyd-Evans, C. M. Logan, J. B. Lowe, I. W. J. M'Adam, Ian Macalister, Olive B. M'Ausland, Mary B. M'Culloch, J. R. M'Gregor, Isobel P. Mackenzie, W. H. Mackenzie, Tormod Macleod, R. L. M'Millan, Betty E. A. Magill, W. R. Marshall, Eleanor C. L. Mears, K. P. G. Mears, F. S. Melville, G. R. Millar, H. C. Miller, Joyce B. Mole, Mabel E. Morris, Minna B. C. Munro, D. S. Murray, J. G. Napier, M. C. Nath, Charles Odamtten-Easmon, G. A. Olmstead, Margaret H. Peill, Richard Percy-Lancaster, D. B. Ray, A. E. Ritchie, Alastair Robertson, A. I. G. Robertson, J. D. Robertson, Marion K. Robertson, W. D. Roden, H. D. Ross, Margaret L. Ross, Helen M. Rossiter (in absentia), H. L. Roxburgh, T. B. Russell, James Scott, Kathleen A. Scott, C. J. Slight, J. R. Smith, A. M. Stewart, H. A. Stewart, Ronald Stewart, G. A. C. Summers, F. F. Temple, J. M. Terris, W. T. Thom, I. S. D. Thomson, W. M. Thomson, W. D. G. Troup, H. M. Urquhart, J. I. Walker, John Wallace, Doreen G. Warnock, A. G. M. Watt, H. M. Weaver, *G. M. Wilson, G. T. T. Wishart, A. E. S. Wood, H. A. Young, and J. B. Yule.

* With honours.

B.Sc.—W. I. Leslie (with second-class honours in pathology) (in absentia).

D.P.H.—Barbara U. Barnetson, A. E. A. Cordin, Agnes D. Ferguson, J. P. A. Halcrow, Margaret J. Honeywill, Beryl G. Petrie, T. W. Robson, P. E. F. Routley, and G. I. Shaw (all in absentia); and A. F. Maccabe.

D.T.M.—G. A. Burfield, Elizabeth Gemmell, A. S. King, H. B. A. Macfie, I. F. Mackenzie, V. V. Muir, G. H. A. Soysa, F. E. Stock.

Diploma in Psychiatry.—R. S. Wilson (in absentia).

D.M.R.—D. H. Cummack, Robert Morrison, Robert Saffley, David Stenhouse, A. N. Stirling, W. C. Swanson, and A. P. Thomson (all in absentia); and Muriel I. R. Ap Thomas.

The Cameron prize in practical therapeutics was awarded to Prof. E. C. Dodds, in recognition of his work on synthetic œstrogens.

Royal Free Hospital

The A. M. Bird postgraduate scholarship in pathology has been awarded to Dr. J. M. Drury-White.

National University of Ireland

The official degree of M.D. is to be conferred on Prof. John Dundon, Prof. A. E. Moore, and Prof. Denis Fitzgerald.

Prof. Denis Coffey has been reappointed representative of the university on the Universities Bureau. A bursary in medicine has been awarded to Dr. Patrick Sweeney, and a bursary in midwifery to Dr. Francis Geoghegan.

Royal College of Physicians of Edinburgh

At a meeting of the College held on July 16, with Dr. Alexander Goodall, the president, in the chair, Dr. Joseph Primrose Leckie (Edinburgh) and Dr. John McMichael (London) were introduced and took their seat as fellows. Dr. Thomas Anderson (Glasgow) and Dr. Robert Freeland Barbour (Bristol) were elected to the fellowship.

Greenstuff for the Hospital

Major-General Sir Robert McCarrison and Dr. T. H. Sanderson-Wells are among those who have signed a letter on behalf of the Food Education Society appealing for fresh garden produce for our hospitals and convalescent homes. They suggest that those who have a surplus in their gardens or allotments should send a proportion regularly to their nearest hospital.

Industrial Nurses

The Royal College of Nursing is organising week-ends for industrial nurses in different parts of the country. Two have been held in London and Birmingham, and another is to take place in Coventry. Dr. J. C. Bridge, senior medical inspector of factories, will address an open meeting at the college on July 27 on matters connected with the new factory and welfare advisory board set up by Mr. Bevin to mitigate the strain on the workers of the present munitions drive. In consultation with Dr. Bridge, the college has arranged a concentrated three weeks' course of instruction for industrial nurses, two weeks' theoretical and one week practical, to meet the present urgency. An advisory committee composed of representatives of the college education department and public health section and medical men concerned with industry is being formed to deal with industrial nursing matters.

Beit Memorial Fellowships for Medical Research

At a meeting of the trustees of these fellowships on July 17 Dr. A. J. Clark, F.R.S., professor of materia medica in the University of Edinburgh, was appointed to the advisory board in the place of Prof. W. Bulloch, F.R.S., who has resigned. Dr. Paul Fildes, F.R.S., was appointed hon. secretary on the resignation of Prof. T. R. Elliott, F.R.S. Of the 27 present fellows 9 have been seconded from their fellowships at their own request for more direct service during the war.

The following elections to fellowships were made:—

SENIOR FELLOWSHIP

T. A. H. Munro, M.B. Edin., F.R.C.P.E. To continue his studies of inheritance in mental disorders at the Royal Eastern Counties Institution, Colchester.

FOURTH-YEAR FELLOWSHIPS

J. G. Chalmers, B.Sc. Glasg., A.I.C. To continue his chemical studies of polycyclic hydrocarbons in experimental cancer formation at the research department of the Glasgow Royal Cancer Hospital.

T. R. R. Mann, M.D. Lwow, Ph.D. Camb. To extend his work on intracellular metallo-protein compounds, especially of red blood-cells, at the Molteno Institute of Biology, University of Cambridge.

JUNIOR FELLOWSHIPS

M. Abercrombie, B.A. Oxf. To study amputation neuromata and the degeneration and regeneration of mammalian nerves, at the department of zoology, University of Oxford.

D. A. K. Black, M.D. St. And., M.R.C.P. To study metabolic and bone marrow changes in the repair of severe anæmias, at the Nuffield Department of Medicine, Oxford.

G. C. Butler, Ph.D. Toronto. To study the purification and properties of gonadotrophic hormone from the pituitary gland, at the department of pathological chemistry, University College Hospital medical school, London.

J. L. Madinaveitia, D.F. Madrid, Ph.D. Edin. To study diffusing factors in bacterial filtrates and snake venoms, at the department of chemistry, University of Manchester.

S. M. Partridge, Ph.D. Lond. To study the chemical nature of the antigen of Shiga dysentery bacteria, at the Lister Institute of Preventive Medicine, University of London.

D. Whitteridge, B.M. Oxf. To study electrical records from brain after concussion or severe injury, at the Nuffield Department of Surgery and the department of physiology, University of Oxford.

P. C. Williams, B.Sc. Lond. To study pituitary hormones and their excretion in clinical pathological conditions, at the Courtauld Institute of Biochemistry, Middlesex Hospital, London.

Naval Medical Compassionate Fund

At the quarterly meeting of the directors of this fund held on July 19, with Surgeon Vice-Admiral Sir Percival Nicholls, medical director-general of the Navy in the chair, the sum of £116 10s. was distributed amongst the various applicants.

A Canadian Hospital

On July 16 Mr. R. B. Bennett presented to Mr. Vincent Massey a building which the Canadian Red Cross Society has erected on a site given by Lord and Lady Astor. The new hospital has 600 beds and its laboratory will be under the direction of Sir Frederick Banting, F.R.S.

Medical Research Council of Ireland

The council has made the following awards:—

Dr. RAYMOND G. CROSS: part-time grant for one year to carry out research work on sterility at the Rotunda Hospital, Dublin.

Prof. J. BRONTE GATENBY: grant-in-aid for expenses in connexion with an investigation of sterility in man and lower animals on the male side.

Prof. J. W. BIGGER: grant-in-aid for one year in connexion with his investigation of the growth of *Bacterium coli* in water.

Miss E. J. POWER STEELE: part-time grant extended for a further six months.

Amenities in Shelters

In a memorandum presented by members of the A.R.P. Co-ordinating Committee to the Ministry of Home Security on July 19 the lack of ventilation, lighting, seating and lavatory accommodation in many communal shelters is criticised. The committee consider that it "is a very bad state of affairs that people should be asked to stand in complete darkness, in hot, ill-ventilated shelters, while raids are in progress, and to run the gauntlet of the raids to get to a lavatory or a water supply."

Military Honours

The O.B.E. has been conferred on Captain (temporary Major) W. R. Macfarlane Drew, M.B. Sydney, R.A.M.C. The D.S.O. has been awarded to Lieutenant (temporary Major) P. H. Newman, F.R.C.S., R.A.M.C., and the M.C. to Lieutenant W. T. Macdonald, M.B. Edin., R.A.M.C.

Lieutenant Newman was responsible for the surgical work in the C.C.S.; at Bethune he organised three twin table operation theatres, and later at Rosendael, Dunkirk, such surgical work that could be undertaken with reduced equipment. His unremitting keenness, hard work, and skill as a surgeon were a source of inspiration to all employed in the surgical division, and were the means of saving many lives and of giving the best possible treatment under most exacting conditions to several hundred badly wounded officers and men. This officer cheerfully accepted the ballot whereby he was left in charge of wounded that could not be evacuated.

On June 1, after having spent the night at La Panne tending numerous casualties under continuous shell fire, Lieutenant Macdonald received instructions to embark wounded on to a beached paddle steamer at Bray les Dunes. Realising that the stranded steamer presented an easy target from the air, he decided to place the wounded on a lifeboat and row them out to sea. The lifeboat was over-full and in getting it away he injured his left arm. They were not far away when a direct hit was seen to take place on the paddle ship, and she burst into flames. Three successive bombing and machine-gun attacks were made on the small boat, but without success.

Appointments

BATTERSBY, JOHN, M.B. Glasg., D.P.H., medical officer of health for Harwich.

BAKER, A. H. L., B.A. Oxfd, L.M.S.S.A., D.A., senior anæsthetist at the West Middlesex County Hospital, Isleworth.

BOUCHER, C. A., D.M. Oxfd, temporary medical officer (A.R.P.) for Shoreditch.

CLARK, D. S., M.B. Edin., D.P.H., D.P.M., medical officer of health for Retford corporation, Retford rural council and Worksop rural council.

CURTIS, ALAN M.B. Lpool, F.R.C.S.E., medical superintendent at an emergency hospital.

FERGUSON, R. L., M.D. Manc., hon. consulting physician for children to the Manchester Northern Hospital.

FISHER, T. N., M.B. Manc., M.R.C.P., D.P.H., hon. physician for children to the Manchester Northern Hospital.

HAM, CONSTANCE, M.D. Brist., F.R.C.S.E., assistant medical officer for Coventry.

HERRIOT, JANET W., M.B. Glasg., temporary assistant medical officer of health for Swansea.

HUCKNALL, R. H., M.B. Birm., F.R.C.S.E., D.O.M.S., assistant surgeon to the Birmingham and Midland Eye Hospital.

MILLARD, C. KILLICK, M.D. Edin., medical officer for Lutterworth and Blaby.

RIDDELL, JOHN, M.D. Glasg., D.P.H., medical officer of health for the Counties of Midlothian, West Lothian and Peebles.

WHERRETT, S. W., M.B. Sidney, D.M.R.E., temporary assistant radiologist to Leeds General Infirmary.

Examining Surgeons under the Factories Act, 1937: Dr. E. M. BADENOCH (Nottingham North, Notts); Dr. L. M. DAVIES (Radcliffe, Lancaster); Dr. P. B. ATKINSON (Ventnor, I.o.W.); Dr. D. S. CAMPBELL (Kirkmichael, Dumfries).

Notes, Comments and Abstracts

THE RED TRIANGLE AT DUNKIRK

THE giant who drank up the Red Sea and dined off twenty oxen roasted whole was a mere trifler with his food compared with the hungry monster confronting the Y.M.C.A. at Dunkirk—an army waiting for the ships which would carry it home. The story is told in a pamphlet ("The Y.M.C.A. with the B.E.F.") recently issued by the association. Like that army, the Y.M.C.A. had gone out to France prepared for a war of position, expecting to open permanent centres behind the line, to build huts and to follow the expeditionary force with mobile canteens. This work was begun quickly; by the middle of February the first centres had been opened at Arras, Le Havre, Boulogne and Dieppe, and others were in hand. Huts were being set up and all sorts of buildings were being converted for use—a bank, a school, a club, a bishop's palace and a dance hall. By early in May 37 centres were in action with 150 workers, including 38 women, staffing them. Twenty-four mobile canteens were serving the expeditionary force. And on May 10 Germany invaded Belgium.

Twenty mobile canteens had been brought forward with stores and equipment, ready to open up centres behind the new front line; but the line began to retire. The centres at Douai, Bapaume, Orchies and Doullens went on working until the German tanks were only a few miles away and they were ordered to leave by the military authorities. Eight mobile canteens remained to serve the retiring forces. Three went to Arras, two to Amiens and three to Lille. All had adventures, but those which went to Lille had the longest run and the most stirring time, for they finished up at Dunkirk. The run to Lille, through roads packed with famished refugees, was a nightmare. Every few miles the canteen workers served cigarettes and chocolates to the troops—cigarettes for six-hundred men—cigarettes for a whole brigade—these orders were not beyond their powers, and guessing the wishes of their subscribers they handed them out freely. Lille was deserted, Amiens fell, the B.E.F. was retiring and the canteens took the road to Cassel. There the workers learned that German tanks were between them and Boulogne and they decided to go to Dunkirk.

German planes were bombing Dunkirk, and the three canteens went to Malo les Bains, the charming, ridiculous seaside town adjoining Dunkirk, where the fronts of the houses used to be painted in brilliant zig-zags, laid on in a holiday spirit. They made a depot of stores there, and two of the cars set off to serve the troops at the docks. The men were filtering into the town from all directions day and night, tired, hungry, recounting terrible stories. Wounded were arriving by rail and road; ambulance trains and lorries waited outside the town until a hospital ship should come. The canteen workers, pausing, distributed cigarettes to the wounded, served tea, and handed out chocolates to men who had been trudging across country for days, hiding in woods from German tanks, and stopping to blow up bridges. The two canteens were the only available source of food and cigarettes; they carried 25 gallons of tea and a reserve of 40 gallons of water. When the water supply ran out—as it did by the middle of the morning—a search for more began, and was rewarded by the discovery of a brackish well in the garden of an old house at Malo. The house next door was burning fiercely. The canteens went on working, eighteen hours at a stretch, under waves of bombers which followed each other at regular intervals. On the next trip back for water and stores Malo was burning from end to end, and on attempting the return journey the workers found that bomb craters had made the road impassable. They took boxes of cigarettes and chocolate and distributed them by hand to the men on the beaches.

In the evening of that day there was a lull in the incessant bombing; the R.A.F. was busy somewhere out of sight. Ships began to come over the horizon, two or three grey destroyers, a hospital ship and half a dozen trawlers. In the light of burning oil-dumps and blazing houses, to the sound of an ammunition dump exploding, the men began to embark. By ten o'clock the raids had begun again. The mobile canteens had

been parked in the courtyard of a hotel near the front, and the stores stacked inside; the workers went on handing out ten cigarettes and a bar of chocolate a head to the men lying on the beaches, but incendiary bombs fired the canteen and all the stores were destroyed except 10,000 cigarettes and a chest of chocolate. When these had been given away the workers took their places on the beach and were embarked as their turn came.

The loss of equipment was absolute: in the retreat the Y.M.C.A. had to sacrifice the stores of 37 centres, the contents of four store depots and six railway trucks, a group of permanent buildings, 15 huts, 24 mobile canteens, 5 lorries, 12 cars, 20 marquees and 30 smaller tents. The value of these goods and equipment was not less than £70,000, and to meet the needs of the forces now in England not less than double those facilities are needed. The association is appealing for £200,000 to meet immediate needs. Some idea of the enormous quantities consumed by hungry men is given by the figures from a south-east coast town where other units of the Y.M.C.A., helped by local volunteers, served the troops arriving from Dunkirk. In this single place the men ate, among other things, six tons of bread, drank over 5000 gallons of tea, and carried off 130,000 cigarettes. At the moment they are not in need of food, of course, but an emergency situation like that of Dunkirk can be made in a matter of hours; and they are in immediate need of the other amenities provided by the association: club-life, games, books, reading and writing rooms, concerts and a bank; rest and refreshment for a garrison of 1,250,000 men.

A.R.P.: WHERE THE STUDENT COMES IN

A FOURTH-YEAR medical student in the north of England, having time on his hands during the vacation, applied to a hospital close to his lodgings for work if there should be an air-raid. After some delay he was asked to go to the outpatient department after raids and act as a dresser. He was not asked for any credentials—not even what medical school he attended or what he had done—and he was not given any written authority to attend the hospital; he is afraid he will have to do a lot of explaining if there is a raid. He makes the following suggestions. The medical school should announce their sanctioning of such work and should ask interested students to call at the office, where they should hand in particulars, their name and address, name of nearest casualty post and so on. The medical school should then write to the authorities involved (a duplicated form could be used for this) stating what the students had done, and recommending the use to be made of them. The letter should request the authorities to get in touch with the students and arrange an interview with a member of the staff. He further suggests that medical schools should arrange voluntary lectures during the vacation on the medical aspects of war.

FIFTH COLUMN WORK AT BART'S?

Charles Fletcher and others who prefer to remain anonymous have a camera at Bart's which they use unscrupulously to take their friends and instructors unawares. The hospital journal has already published a number of these masterpieces, brilliantly labelled, and now they have been collected, with others, into a book (Candid Camera. Published by the editors and committee of the *St. Bartholomew's Hospital Journal*, 2*s*. 3*d*.). And what a book! No wonder it begins with acknowledgements and apologies. Here are the immemorial medical students' jokes, certainly, but freshly and pertly made. The reader—or rather the looker—need not know the victims to appreciate the humour, but, just to ensure that he has his money's worth, the editor has added an index identifying the slain; because it is, after all, an additional pleasure to know that Lord Horder is saying, "Look, I can balance this on my head," that the presiding priest at the faith-healing clinic is Mr. H. Jackson Burrows, and that the leg ("Now here's a nice line at 1*s*. 11*d*.") is being offered to the public by Mr. Michael Boyd. There is a lot more to be said for this book, but it speaks best for itself, and is an investment; every time the owner, turning out some cupboard in the next ten years, comes across it he will have his laughs over again. One or two of the pictures—"I give you two guesses," and "Let me see, which side is the heart?"—are as natural and unconscious as shots from a French film; which goes to show that even nature can sometimes mimic art.

THE LIFE OF EQUIPMENT

To keep a thing for seven years is not always to ensure that a use will be found for it. Stored equipment deteriorates unless it is moved and dusted frequently, and material which would have been saved by a timely airing is thus wasted. The Minister of Health, in a recent circular to authorities in charge of air-raid schemes, points out that, properly stored, most of the material issued by his department will remain serviceable for several years. Rapidly perishable items should be used for medical treatment and replaced by equipment of the same kind and quality. Other items will last much longer if turned over within periods varying from 6 months to 2 years. The periods quoted are as follows: ether, 6 months; adhesive plaster and adrenaline in rubber-capped bottles, 1 year; pituitary extract and absorbent cotton-wool, 1½ years; waterproof sheeting, calamine lotion, Alopon and tannic acid jelly, 2 years.

A LIST OF BRITISH CHEMICALS

A NEW edition of the directory of British fine chemicals produced by members of the British Chemical Manufacturers Association contains a list of some 5000 chemical compounds manufactured in this country with the names of the firms who make them. It is a witness to the almost unbelievable progress made by this branch of British industry since the last war, when very few pages would have sufficed to set out the fine chemical products actually made in this country. Quite a number of the articles are manufactured by one firm only, a fact which is partly explained by the smallness of the total demand for specific products such as barbitone, calcium nucleinate, phenacetin and resorcin. By contrast there are seven British makers of aspirin, five of potassium bromide, seven of bismuth carbonate and eight of sodium sulphate. Evidence of the newness of the list is seen in the inclusion of substances which are now being produced by British manufacturers under licences granted by the Comptroller of Patents. These were the subject of a recent notice issued by the British Pharmacopœia Commission, who recommended that the new names given to these substances should be adopted in place of their more familiar proprietary names (see THE LANCET 1940, **1**, 804). Copies of the directory may be obtained free of charge from the Association of British Chemical Manufacturers, 166, Piccadilly, London, W.1.

STANDARD DRESSINGS.—The new supplement to the B.P.C., published by the Pharmaceutical Press at 2*s*., adds nine more to the six dressings included in the N.H.I. drug tariff. The first two in the B.P.C. series are the two standard dressings of the tariff, containing double cyanide gauze and material for fomentations. Nos. 3–6, corresponding to the four wound dressings of the tariff, are pads of increasing size medicated with boric lint and fixed to a base of elastic adhesive fabric. Nos. 7–9 are small, medium and large first-aid dressings containing cotton-wool, boric lint and a bandage, the next three are intended for burns, with euflavine lint, and Nos. 13–15 are plain first-aid dressings in which absorbent gauze takes the place of the boric lint in Nos. 7–9. The supplement ends with a monograph on euflavine lint, which is lint impregnanted with about 0·1% of euflavine.

The Allied Relief Fund of America has given several X-ray installations, at a cost of £10,000, for use in emergency hospitals. The first of these, installed in a special maxillo-facial hospital in the home counties, was formally handed over by Mr. Cruger, of the Chase National Bank. It was received on behalf of the hospital by Sir Harold Gillies, consultant adviser in maxillo-facial surgery to the Ministry of Health, and Dr. S. Cochrane Shanks. Other X-ray equipment has been given by the fund to chest and gastro-intestinal hospitals in the home counties, a special chest and maxillo-facial hospital in Lancashire, and a neuro-surgical hospital in Northumberland.

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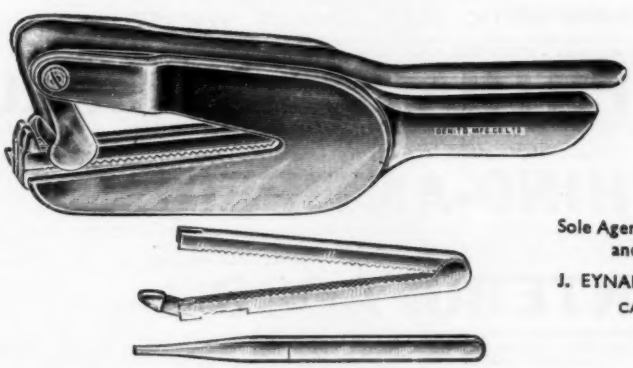

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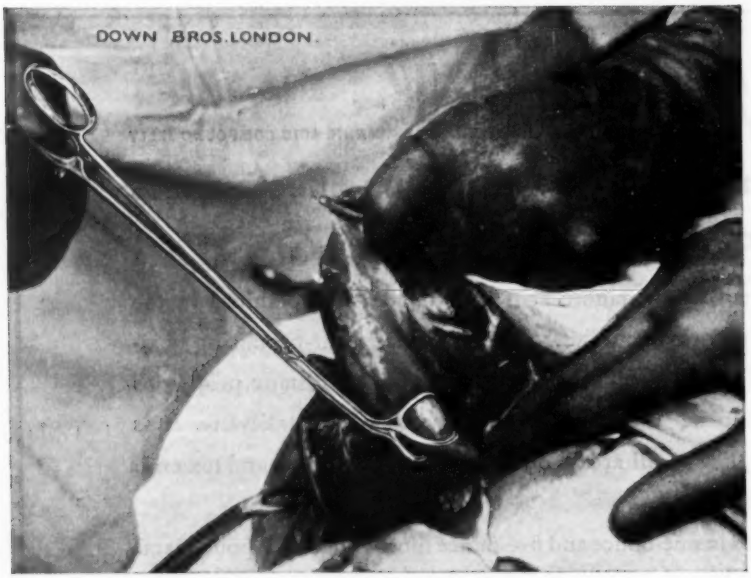

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WAR SURGERY OF THE ABDOMEN. 5th–9th August, 1940.

MONDAY, 5TH AUGUST.		
10 a.m.	Introduction.	Sir Cuthbert Wallace, K.C.M.G., C.B., LL.D., F.R.C.S.
11.15 a.m.	Types of Abdominal Wounds and their pathological consequences.	
1.15 p.m.	Bus to Royal College of Surgeons.	
2 p.m.	Demonstration of Specimens in War Collection at College.	Mr. R. T. Payne, M.D., M.S., F.R.C.S.
TUESDAY, 6TH AUGUST.		
10 a.m.	Gunshot Wounds in the Field.	
11.15 a.m.	Technique of Operation for Abdominal Wounds.	
12.15 p.m.	Instruments and Appliances for Abdominal Surgery.	Mr. R. H. Franklin, M.B., B.S., F.R.C.S.
2 p.m.	Cadaver Demonstrations.	Mr. A. K. Henry, M.Ch., F.R.C.S.
WEDNESDAY, 7TH AUGUST.		
10 a.m.	Wounds of Solid Viscera.	Prof. G. Grey Turner, LL.D., D.Ch., M.S., F.R.C.S., F.A.C.S., F.R.A.C.S.
11.15 a.m.	Abdomino-Thoracic Wounds.	
12.30 p.m.	X-ray Demonstrations.	Dr. J. Duncan White, M.B., Ch.B., D.M.R.E.
2 p.m.	After-treatment of Abdominal Wounds and Immediate Complications.	Mr. D. M. Douglas, M.S., F.R.C.S.
3 p.m.	Some Late Complications and Sequelæ.	Mr. W. H. Ogilvie, M.D., M.Ch., F.R.C.S., F.A.C.S.
THURSDAY, 8TH AUGUST.		
10 a.m.	Gunshot Wounds of Bladder & Pelvis.	
11.15 a.m.	Gunshot Wounds of Kidney & Ureter.	
12.30 p.m.	X-ray Demonstrations.	Dr. J. Duncan White, M.B., Ch.B., D.M.R.E.
2 p.m.	Gunshot Wounds of Urethra, etc.	Mr. Clifford Morson, O.B.E., F.R.C.S.
3.15 p.m.	Gunshot Wounds of External Genitalia.	Mr. Clifford Morson, O.B.E., F.R.C.S.
FRIDAY, 9TH AUGUST.		
10 a.m.	Gunshot Wounds of Rectum and Large Bowel.	Sir Charles Gordon-Watson, O.B.E., M.S., F.R.C.S., F.R.A.C.S.
11.15 a.m.	Complications of Gunshot Wounds of Rectum and Large Bowel.	
12.30 p.m.	Anæsthesia.	Dr. H. Woodfield Davies B.A., L.M.S.S.A.
2 p.m.	Miscellaneous Considerations regarding Gunshot Wounds of the Abdomen.	

Names of further Lecturers will appear next week.

The fee for the Course will be £1 1s., but no fee will be charged in the case of Officers of the Armed Forces who submit a leave certificate and register their names before the commencement of the Course. Applications for tickets should be addressed to the Dean, British Postgraduate Medical School, Ducane Road, W.12. Further Courses of War Surgery will commence as follows:—War Surgery of the Extremities: Monday, August 19th, 1940. Operative Surgery in Wartime, including Cadaver Surgery: Tuesday, August 27th, 1940.

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FEES : 1st Class (men only) from £5 5s. per week upwards. 2nd Class (men and women) 32/- per week.

For further particulars apply : **C. EDGAR GRISEWOOD, A.C.A., Secretary, 20, Exchange Street East, Liverpool, 2**

THE COPPICE, NOTTINGHAM.

HOSPITAL FOR MENTAL DISEASES.

President : The Right Hon. LORD BELPER.

This Institution is exclusively for the reception of a limited number of PRIVATE PATIENTS of both sexes, of the UPPER and MIDDLE CLASSES, at moderate rates of payment. It is beautifully situated in its own grounds, on an eminence a short distance from Nottingham, and commands an extensive view of the surrounding country ; and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received. Occupational Therapy. For terms, &c., apply to the Medical Superintendent.

Telephone : 64117 Nottingham.

MENTAL NURSES
Also Fully Trained Nurses for
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MALE & FEMALE TRAINED — THE TEMPERANCE — NURSES CO-OPERATION
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In conjunction with the MALE NURSES' ASSN.
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Mrs. MILLICENT HICKS, *Superintendent* W. J. HICKS, *Secretary*

MALLING PLACE, KENT
For LADIES and GENTLEMEN of Unsound Mind.
Terms moderate. Apply to Resident Medical Superintendent.
Telegrams: ADAM WEST MALLING. Telephone No. 2: MALLING.

FENSTANTON, at "FIVE DIAMONDS," Chalfont St. Giles, Bucks.
A Private Home for the Care and Treatment of a limited number of LADIES with Mental and Nervous Disorders. Certified, Voluntary, and Temporary Patients received. Mansion with 12 acres of ground. (*See Medical Directory*, p. 2346.) Apply Resident Physician. Telephone: Little Chalfont 2048. Station: Chalfont and Latimer.

THE OLD MANOR SALISBURY
A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.
Extensive grounds. Detached Villas. Chapel. Garden and Dairy Produce from own farm. Terms very moderate.
CONVALESCENT HOME AT BOURNEMOUTH Detached Villas standing in 12 acres of ornamental grounds, with tennis courts, etc., which Voluntary, Temporary or Certified Patients may visit by arrangement for long or short period.
Illustrated Brochure on application to the Medical Superintendent. The Old Manor, Salisbury. Telephone: Salisbury 3216 and 3217.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.
For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from Mental and Nervous Disorders, Alcoholism and Drug addiction, either voluntarily, temporarily, or under certificate. Patients are classified in separate buildings according to their mental condition. Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT. *'Phone:* Ashton-in-Makerfield 7311. *Tele. Address:* Street, Ashton-in-Makerfield.

NORTHUMBERLAND HOUSE
GREEN LANES,
FINSBURY PARK, N.4
A PRIVATE HOSPITAL for the treatment of mental and nervous illnesses. Conveniently situated and easy of access from all parts. Six acres of ground facing Finsbury Park. Voluntary and Temporary Patients received without certification. Occupational Therapy, Psychotherapy, and other modern forms of treatment. Air-raid Shelters have been provided.
Telephone: Stamford Hill 2688. *Telegrams:* "SUBSIDIARY, LONDON."
Convalescent Home, KEARSNEY COURT, DOVER.
For further particulars apply to the MEDICAL SUPERINTENDENT.

HOLLOWAY SANATORIUM VIRGINIA WATER

A Registered Hospital for the Treatment of MENTAL DISORDERS of the EDUCATED CLASSES. Founded by THOMAS HOLLOWAY in 1885.

This Institution is situated in a beautiful and healthy locality within easy reach of London. It is fitted with every comfort. Patients can have Private Bedrooms and Special Nurses as well as the use of General Sitting Rooms, at moderate rates of payment. Voluntary Patients can be admitted.

There is a Branch Establishment at CANFORD CLIFFS, BOURNEMOUTH, where Patients can be sent for a change and be provided with all the comforts of a well-appointed home.

For Terms, apply to—
The RESIDENT MEDICAL SUPERINTENDENT, St. Ann's Heath, Virginia Water, SURREY

ST. ANDREW'S HOSPITAL

FOR NERVOUS AND MENTAL DISORDERS,

NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

PRESIDENT: THE MOST HON. THE MARQUESS OF EXETER, K.G., C.M.G., A.D.C.

MEDICAL SUPERINTENDENT: THOMAS TENNENT, M.D., M.R.C.P., D.P.H., D.P.M.

This Registered Hospital is situated in 130 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble; temporary patients, and certified patients of both sexes are received for treatment. Careful clinical, bio-chemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE

This is a Reception Hospital in detached grounds with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the complete investigation and treatment of Mental and Nervous Disorders by the most modern methods: insulin treatment is available for suitable cases. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Plombieres treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-Ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High-frequency treatment. It also contains Laboratories for bio-chemical, bacteriological, and pathological research. Psychotherapeutic treatment is employed when indicated.

MOULTON PARK

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupational therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (TELEPHONE: No. 2356 and 2357 Northampton), who can be seen in London by appointment.

CHEADLE ROYAL HOSPITAL, Cheadle, Cheshire.

This REGISTERED HOSPITAL, with a SEASIDE BRANCH at Colwyn Bay, N. Wales, is for the treatment and care of those of the Upper and Middle Classes suffering from MENTAL AND NERVOUS DISEASES.

The Hospital is governed by a COMMITTEE, appointed by the TRUSTEES of the Manchester Royal Infirmary.

In addition to the Main Buildings there are separate villas. Extensive grounds. Hard and grass tennis courts, cricket and croquet grounds, and a court for badminton. There are also wireless installations. Golf may be had within easy distance. Occupational Therapy.

VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS received.

The Hospital is nine miles from Manchester, 50 minutes by rail from Liverpool, and 3½ hours from London.

For terms and further particulars apply to the Medical Superintendent, who may be seen in Manchester BY APPOINTMENT. *Telephone: Gatley* 2231 (3 lines).

CAMBERWELL HOUSE

Telegrams: "PSYCHOLIA, LONDON." **33, PECKHAM RD., LONDON, S.E.5.** Telephone: Rodney 4242 (2 lines).

For the treatment of MENTAL DISORDERS.

Also completely detached Villas for Mild Cases, with private suites if desired. Voluntary Patients received. Twenty acres of Grounds. Hard and Grass Tennis Courts, Putting Greens, Bowls, Croquet, Squash Rackets, Recreation Hall with Badminton Court, and all indoor amusements, including Wireless and other Concerts, Occupational Therapy, Calisthenics, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths, Operating Theatre, Pathological Laboratory, Dental Surgery, and Ophthalmic Department. Chapel. **Shock and also modified Insulin Therapy.**

Senior Physician: Dr. HUBERT JAMES NORMAN, assisted by a resident Medical Staff, and visiting Consultants.

An Illustrated Prospectus, giving fees which are strictly moderate, may be obtained upon application to the Secretary.

The Convalescent Branch is Hove Villa, Brighton, and is 200 feet above sea level.

THE COTSWOLD SANATORIUM

First opened in 1898 and rebuilt in 1925 on the Cotswold Hills seven miles from Cheltenham, for the Treatment of Pulmonary and all other forms of Tuberculosis. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air, SPECIAL TREATMENT by artificial PNEUMOTHORAX (X-ray controlled). TUBERCULINS, and ULTRA-VIOLET RAYS is available when necessary without extra charge. X-RAY plant, Fully Equipped Dental Department, Electric Light Radiators, hot and cold basins and Wireless in all rooms. Up-to-date drainage. Full day & night Nursing Staff. **Terms: 5 to 7½ Guineas a week inclusive.**

Med. Supt.: GEOFFREY A. HOFFMAN, B.A., M.B., T.C. Dub. *Asst. Phys.:* MARGARET A. HARRISON, M.B., B.S. Lond. *Cons. Laryngologist:* G. N. BARKER, F.R.C.S. Edin., D.L.O. *Cons. Dent. Surgeon:* GEORGE V. SAUNDERS, L.D.S.R.C.S. Lond. *Phone:* 81 & 82 Witcombe. Apply: *The Secretary, The Cotswold Sanatorium, Cranham, Gloucester. Telegrams:* "Hoffman, Birdlip."

PRIOR PLACE SANATORIUM

HEATHERSIDE, CAMBERLEY, SURREY.

FOR THE TREATMENT OF PULMONARY TUBERCULOSIS

Well situated on high ground and surrounded by pines and heather.
All rooms are fitted with electric light, wash basins with hot and cold water, and radiators.
X ray plant. Day and night nursing staff.

RESIDENT MEDICAL SUPERINTENDENT: Dr. H. O. BLANFORD, to whom application for admission can be made.

THE GROVE HOUSE,
CHURCH STRETTON, SHROPSHIRE.
Private Home for Ladies mentally ill. Voluntary and Temporary Patients received.
Medical Superintendent: Dr. J. A. McCLINTOCK.

Sunnyside

For Convalescent Patients or those requiring restful holiday combined with Massage, electrical and other Physical treatment. Electric Lift and modern amenities. *Brochure from Medical Superintendent.*

Restorium

HASSOCKS, SUSSEX
(in association with fully licensed Downs Hotel). Telephone: 103.

WEIR COTTAGE
CHERTSEY, SURREY
Reception area London 20 miles Grounds of 10 acres
A Private Home for Patients receiving Psychotherapy or other special mental treatment. Inclusive fees from 10 guineas
Apply Dr. GLAISTER Tel.: Chertsey 2135 & Welbeck 0049

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Over 50 years' experience
POSTAL AND ORAL COACHING
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ALL MEDICAL EXAMINATIONS
MEDICAL PROSPECTUS (36 pages),
sent gratis, along with List of Tutors, &c., on application to the Principal, 17, Red Lion-square, London, W.C.1. (Telephone: HOLborn 6313.)

Metropolitan Borough of Islington.

TEMPORARY MEDICAL OFFICER (A.R.P.).

Applications are invited for the post of Temporary Medical Officer (Male), to be engaged on specific A.R.P. duties. The duties of the post will be concerned chiefly with the advanced training of A.R.P. personnel and Casualty Service work, and the Medical Officer will be expected to train sub-instructors, assist with competitions, and generally to co-ordinate the training of the Street Casualty Services in accordance with the scheme of the Ministry of Home Security.

The commencing salary will be £600 per annum, and the appointment will be terminable by one month's notice in writing on either side. Previous A.R.P. experience under a local authority or of casualty work in the field is not essential, but would be taken into consideration.

Applications should be made on the prescribed form to be obtained from the undersigned, and should be returned, together with copies of three testimonials, endorsed "A.R.P. Medical Officer," not later than Friday, 2nd August, 1940.

W. ERIC ADAMS, Town Clerk.

Town Hall, Upper-street, N.1, 20th July, 1940.

University College Hospital,

Gower-street, W.C.1.

Applications are invited for the whole-time post of SURGICAL REGISTRAR (B1) for a period of one year from the 1st October, 1940. The salary will not be less than the normal rate of £250 per annum. Particulars of the appointment can be obtained from the Secretary.

Applications, accompanied by evidence of fitness for the post, must reach the Secretary by first post on Monday, the 2nd September, 1940.

R. SLOLEY, Secretary of the Corporation.

Hampstead General Hospital,

Haverstock-hill, N.W.3.

OUT-PATIENT DEPARTMENT—CAMDEN TOWN, N.W.1.

Applications are invited from registered Single Medical Women for the resident appointment of CASUALTY SURGICAL OFFICER for six months, vacant 1st September next, at the Out-patient Department, Camden Town. Salary £100 per annum, plus an allowance of £50 per annum for duties in connexion with the First-aid Post established there.

Applications on the prescribed form, with copies of three testimonials, to be returned by 24th August.

KENNETH A. F. MILES, Secretary.

Resident Assistant Medical Officer

(B1) required by MIDDLESEX COUNTY COUNCIL for COUNTY SANATORIUM AND EMERGENCY HOSPITAL, Clare Hall, South Mimms, Barnet, Herts. Registered Medical Practitioners, including suitably qualified R Practitioners holding B2 or B1 Posts, who have held House Appointments. Experience in diagnosis and treatment of tuberculosis. Salary £400 by £25 to £475 per annum. Board, lodging, and laundry. Whole-time duties under Medical Superintendent. Medical examination and one month's notice. For four years only. Post now vacant.

Applications to the undersigned, stating age, nationality, qualifications with dates, experience, and details of previous appointments. No application forms. Relationship to any member or officer of the Council to be disclosed. Copies of three recent testimonials. Canvassing directly or indirectly will disqualify. Closing date 3rd August.

C. W. RADCLIFFE, "B.3," Clerk of the County Council.

Guildhall, Westminster, S.W.1.

British Postgraduate Medical School.

(UNIVERSITY OF LONDON.)

There is a vacancy for an ASSISTANT with special experience in Bacteriology in the DEPARTMENT OF PATHOLOGY.

The selected candidate will be required to work in the Bacteriological section under the direction of the Professor of Pathology. His duties will include routine clinical bacteriology, research, and teaching.

The appointment will be for the duration of the war but may be terminated earlier by three months' notice. The salary will be at the rate of £400 per annum. The successful candidate may join the Federated Superannuation System for Universities.

Applications accompanied by copies of testimonials and the names of two referees, should be sent to the Dean, British Postgraduate Medical School, Ducane-road, London, W.12, from whom further particulars may be obtained. They should arrive not later than 16th August, 1940.

The Hostel of St. Luke

(The Clergy Nursing Home)
14, Fitzroy-square, London, W.1.

APPOINTMENT OF RESIDENT MEDICAL OFFICER (B2).

Applications are invited from registered Medical Practitioners (Male) for the appointment of Resident Medical Officer (B2) to become vacant on 1st August, 1940, including R Practitioners who hold A Posts and who have not completed five months' tenure of those posts. If held by an R Practitioner, the appointment will be limited to six months, otherwise it will be for a period of six months and may be renewable for a further period of six months. The salary is at the rate of £200 per annum with full residential emoluments.

Applications, stating age, qualifications, with dates, nationality and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than 29th July, 1940.

J. A. CAMPBELL, Capt. R.N. Retd., Secretary.

The South London Hospital for Women,

Clapham Common, S.W.4.

Applications are invited from Medical Women for the undermentioned appointments:—

RESIDENT MEDICAL OFFICER (B1) for a period of twelve months from 1st September. Applicants should have held house appointments. Salary at the rate of £150 per annum, with full residential emoluments.

HOUSE PHYSICIAN (A) for a period of six months from 1st September. Salary at the rate of £100 per annum, with full residential emoluments.

Candidates are requested to call on members of the Hon. Medical Staff before Saturday, August 17th, by which date applications, stating age, nationality, qualifications with dates, and accompanied by copies of three recent testimonials, must reach the Secretary at the Hospital.

London County Council.

Medical Practitioners required for undermentioned positions with general medical or surgical duties in Council's general and special hospitals. Married quarters not available.

TEMPORARY ASSISTANT MEDICAL OFFICERS
(CLASS I) (B1)

Salary—£350–£25–£425. Suitably qualified R Practitioners holding B2 or B1 appointments are invited to apply.

TEMPORARY ASSISTANT MEDICAL OFFICERS
(CLASS II) (B2)

Salary—£250. R Practitioners who hold A posts may apply. If held by an R Practitioner the appointment will be limited to six months.

All positions are with board, lodging, and washing.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division 2, County Hall, S.E.1, returnable by 5th August.

Canvassing disqualifies.

Hampstead General Hospital,

Haverstock-hill, N.W.3.

Applications are invited from Single Medical Men for the post of HOUSE SURGEON (B2) for six months, vacant 1st September next. Salary £100 per annum.

Applications on the prescribed form, with copies of three testimonials, to be returned 24th August.

KENNETH A. F. MILES, Secretary.

London County Council.

TEMPORARY ASSISTANT DISTRICT MEDICAL OFFICERS required for Area VII, District F (West Norwood and part West Dulwich), salary £200 (£250 from 1st October, 1940), and District N (Streatham), salary £160 (£200 from 1st October, 1940).

Must reside in or near district.

Application form with further particulars obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health, Staff Division (1), County Hall, S.E.1, returnable by 3rd August. Canvassing disqualifies.

University College, London.

Applications are invited for the post of TEMPORARY JUNIOR DEMONSTRATOR IN ANATOMY. Duties to commence first week in October, 1940. Salary £250 (candidate possessing medical qualifications £350).

Further particulars may be obtained from the Secretary, University College, London, Gower-street, W.C.1.

Staffordshire, Wolverhampton, and DUDLEY JOINT BOARD FOR TUBERCULOSIS.

PRESTWOOD SANATORIUM. (200 Beds.)

Applications are invited from registered Medical Practitioners, including R Practitioners who hold A Posts, for the post (B2) of JUNIOR ASSISTANT MEDICAL OFFICER (Male) at the above-named Sanatorium, which is approximately nine miles from Wolverhampton. The successful candidate will have opportunities of obtaining experience in the work of a Dispensary. The appointment will be for six months in the first instance, renewable for a further maximum period of six months. If held by an R Practitioner the appointment will be limited to six months.

Salary at the rate of £300 per annum, with board, residence, and laundry.

Forms of application may be obtained from the undersigned and should be returned by first post on the 3rd August, 1940, together with copies of not more than three recent testimonials.

H. L. UNDERWOOD, Clerk of the Joint Board.

County Buildings, Stafford, 12th July, 1940.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

EPSOM COUNTY HOSPITAL. (330 Beds.)

RESIDENT ASSISTANT MEDICAL OFFICER (B2).

Applications are invited for the above appointment which will be available for a period of six months, renewable for a further six months (R Practitioners who hold A appointment may apply, but if appointed the term of appointment is limited to six months). The salary will be at the rate of £250 per annum, together with full residential emoluments valued at £125 per annum. Applicants should preferably have had previous resident hospital experience.

Applications, stating nationality, age, qualifications, and experience, and enclosing copies of not more than three recent testimonials, should be sent to the Medical Superintendent, Epsom County Hospital, Dorking-road, Epsom, so as to reach him not later than 2nd August, 1940.

DUDLEY AUKLAND, Clerk of the Council.

County Hall, Kingston-upon-Thames, 26th July, 1940.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

SURREY COUNTY SANATORIUM, MILFORD, near GODALMING. (348 Beds.)

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (B2) (Male or Female).

Applications are invited for the above appointment which will be available for a period of six months, renewable for a further six months (R Practitioners who hold A appointment may apply, but if appointed the term of appointment is limited to six months). The salary will be at the rate of £250 per annum, together with full residential emoluments valued at £100 per annum. Applicants should have held a house appointment in a general hospital.

Applications, stating nationality, age, qualifications, and experience, and enclosing copies of not more than three recent testimonials, should be sent to the Medical Superintendent, Surrey County Sanatorium, Milford, near Godalming, Surrey, so as to reach him not later than 1st August, 1940.

DUDLEY AUKLAND, Clerk of the Council.

County Hall, Kingston-upon-Thames, 26th July, 1940.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

WOKING WAR HOSPITAL (200 Beds + 80 Reserve Beds).

MEDICAL SUPERINTENDENT (Salary £800 + board and lodging or £100 p.a. if non-resident).

Applicants for the above temporary appointment must hold a higher medical qualification and have had considerable operating and also administrative experience. The appointment is for a period not exceeding the duration of the war and is terminable by 3 months' notice on either side.

Applications, with copies of three testimonials, should be sent to the County Medical Officer, County Hall, Kingston-on-Thames, by Wednesday, 31st July, 1940.

DUDLEY AUKLAND, Clerk of the Council.

County Hall, Kingston-upon-Thames, 26th July, 1940.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

KINGSTON COUNTY HOSPITAL. (530 Beds.)

RESIDENT ASSISTANT MEDICAL OFFICER (B2).

Applications are invited from registered Medical Practitioners for the appointment of Resident Assistant Medical Officer at the Kingston County Hospital, Kingston-upon-Thames.

The Medical Officer appointed should preferably have had previous experience as House Surgeon.

The appointment, which is recognised for the F.R.C.S. (Eng.), is for a period of six months, renewable for a further period of six months, and the salary is at the rate of £250 per annum, together with full residential emoluments valued at £125 per annum.

R Practitioners who are now holding B2 posts may apply, but if appointed the tenure of the appointment will be limited to six months, and will not be renewable, and will be subject to the assent of the Central Medical War Committee.

Applications, stating age, qualifications, and experience, and enclosing copies of not more than three recent testimonials, should be addressed to the Medical Superintendent, Kingston County Hospital, Wolverton-avenue, Kingston-upon-Thames, so as to be received not later than 1st August, 1940.

DUDLEY AUKLAND, Clerk of the Council

County Hall, Kingston-upon-Thames, 26th July, 1940.

Surrey County Council.

PUBLIC HEALTH DEPARTMENT.

REDHILL COUNTY HOSPITAL. (400 Beds.)

ASSISTANT MEDICAL OFFICER AND ACTING DEPUTY MEDICAL SUPERINTENDENT (B.1).

Salary £350 p.a., rising by annual increments of £25 to £450 p.a., plus a special allowance of £50 per annum while acting for the Deputy Medical Superintendent who has been transferred to a special war-time appointment, plus board and lodging valued for superannuation purposes at £125 p.a. Suitably qualified R Practitioners holding B2 or B1 appointments may apply.

The tenure of office is limited to five years and the appointment is terminable by 3 months' notice on either side. Accommodation (unfurnished) is available for married man at rent of £60 p.a., in which case cash allowance of £125 p.a. would be paid in lieu of board and lodging. Candidates should preferably hold a higher medical qualification.

Applications to be sent to the Medical Superintendent, Redhill County Hospital, Earlswood Common, Redhill, by Thursday, 1st August, 1940. DUDLEY AUKLAND, Clerk of the Council.

County Hall, Kingston-upon-Thames, 26th July, 1940.

Horton General Eye Hospital, Banbury, OXON.

APPOINTMENT OF RESIDENT MEDICAL OFFICER (B2)

Applications are invited from registered Medical Practitioners, Male or Female.

Appointment becomes vacant on 21st August, 1940. The appointment is limited to 6 months. Salary at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality and present post (if any) accompanied by copies of 3 recent testimonials, should be sent to the undersigned not later than Monday, 5th August, 1940. RICHARD H. PRESCOTT,

Secretary and House Governor.

Beckett Hospital, Barnsley.

APPOINTMENT OF HOUSE PHYSICIAN (B2).

Applications are invited from registered Medical Practitioners, Male, for the appointment of House Physician. If held by R Practitioner the appointment will be limited to six months.

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

ARTHUR L. BOURNE, Secretary-Superintendent.

23rd July, 1940.

Huddersfield Royal Infirmary. (321 Beds.)

Male HOUSE SURGEON (an A appointment) required, to be attached to EYE, EAR, NOSE, AND THROAT DEPARTMENTS. Duties include the administration of anæsthetics. Salary will be at the rate of £150 per annum, with board, residence, and laundry. Appointment for six months, subject to renewal for a similar period. If held by an R Practitioner the appointment will be limited to six months.

Applications, with copies of three recent testimonials, to be addressed to the undersigned immediately.

H. J. JOHNSON, General Superintendent and Secretary.

City of Bradford.

Applications are invited for the post of ASSISTANT SCHOOL MEDICAL OFFICER.

Salary £500 per annum, rising, subject to satisfactory service, by annual increments of £25 to £700 per annum.

The salary is subject to a deduction under the Local Government Superannuation Act, 1937, and the person appointed will be required to pass a medical examination.

Form of application may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned not later than the 7th August, 1940.

N. L. FLEMING, Town Clerk.

Town Hall, Bradford, 19th July, 1940.

Borough of Llanelly.

ASSISTANT (LADY) MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Town Council invite applications for the above whole-time appointment from duly qualified single Lady Medical Practitioners. Applicants must have had at least three years' experience in the medical profession and special experience in midwifery and child welfare work. Possession of the Diploma in Public Health will be an advantage.

Salary £500, increasing by annual increments of £25 to £700 per annum.

The officer will be required primarily to carry out duties relative to Maternity and Child Welfare and School Children and any assigned work in connection with the Medical Services of the Borough under the direction of the Medical Officer of Health.

The appointment is subject to the Superannuation Act.

The selected candidate must pass a satisfactory medical examination.

Prescribed application forms may be obtained from the undersigned, and when sent in should be endorsed "Assistant Medical Officer" and addressed so as to be delivered to the undersigned on or before 9th August, 1940.

DAVID J. PHILLIPS, Town Clerk.

Town Hall, Llanelly, 16th July, 1940.

Keighley and District Victoria Hospital,

YORKSHIRE, WEST RIDING.
(140 Beds.—Two Residents.)

APPOINTMENT OF RESIDENT MEDICAL OFFICERS.

Applications are invited from registered Medical Practitioners (Female) for the following posts :—

FIRST RESIDENT MEDICAL OFFICER. Salary £160 per annum, to commence 12th August, 1940.

SECOND RESIDENT MEDICAL OFFICER. Salary £120 per annum, to commence 1st September, 1940.

Proof of registration to be furnished before appointment.

Full residential emoluments. Term, six months renewable.

Applications, with particulars of age, experience, and nationality, together with copies of two recent testimonials, to be sent to the undersigned not later than 3rd August, 1940.

J. YOUNG, Secretary-Superintendent.

County Borough of Preston.

SHAROE GREEN HOSPITAL.
(250 Beds.)

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER
(Female).

Applications are invited from fully qualified and registered Practitioners for the above appointment. Salary at the rate of £150 per annum, with full board and residence. The appointment will be for a period of six months and can be renewed for a period not exceeding six months at a salary at the rate of £200.

Applications, stating age, qualifications, experience, and nationality, together with copies of three recent testimonials, should be forwarded to the Medical Superintendent, Sharoe Green Hospital, Fulwood, Preston.

Fife County Council.

EMERGENCY HOSPITAL SCHEME.

Applications are invited for the post of RESIDENT MEDICAL OFFICER, Cameronbridge (Inf. Dis.) Hospital (200 Beds), incorporated in the Emergency Hospital Scheme. Salary £550 per annum, with board, quarters, &c.

Applications, stating age, conjugal condition, qualifications, present appointment, period of previous medical, surgical and fever experience and where acquired, together with copies of three recent testimonials, to be sent to the County Medical Officer, County Buildings, Cupar, Fife, not later than 11 a.m. on 3rd August, 1940.

J. M. MITCHELL, County Clerk.

County Buildings, Cupar, Fife. 24th July, 1940.

The Children's Hospital, Sheffield.

(Inc.) (157 Beds.)

Applications are invited from Registered Medical Practitioners (Male and Female) for the appointment of HOUSE SURGEON "A" to fill the present vacancy, including R Practitioners within six months of qualification. If held by an R Practitioner, appointment will be limited to six months. Salary is at the rate of £100 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned as soon as possible.

T. H. G. GARTLAND, Superintendent and Secretary.

City Hospital, Chester.

Applications are invited from registered Medical Practitioners, Male or Female, including R Practitioners within six months of qualification, for the appointment of JUNIOR RESIDENT MEDICAL OFFICER (A) on the resident staff of the above General Hospital, 200 Beds. The appointment will be for six months but terminable on one month's notice on either side. Salary at the rate of £150 per annum, plus full residential emoluments.

Applications, together with copies of three recent testimonials, must be delivered to the Medical Officer of Health, Town Hall, Chester, by Friday, 2nd August, 1940.

Canvassing will disqualify, and relationship to members or officers of the Council must be disclosed.

Doncaster Royal Infirmary.

HOUSE SURGEON (Male), A appointment, required for August 1st. The appointment is for six months. Six House Surgeons are Resident.

Salary at the rate of £175 per annum, with residence, board, and laundry.

This large industrial area offers excellent opportunities for gaining experience.

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

R. LANCASTER, Secretary-Superintendent.

Lincoln County Hospital.

APPOINTMENT OF A HOUSE SURGEON (A).

Applications are invited from registered Medical Practitioners for the appointment of Junior House Surgeon (A), including R Practitioners within six months of qualification. The appointment is for six months. Salary is at the rate of £150 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, nationality, and accompanied by three recent testimonials, should be sent to the undersigned.

ARTHUR MOORE, Secretary-Superintendent.

Lincoln, 7th July, 1940.

General Hospital, Nottingham.

(389 Beds.)

EAR, NOSE, AND THROAT DEPARTMENT.

Applications are invited from registered Medical Practitioners (Male and Female) for the appointment of a HOUSE SURGEON (A) for the above Department containing 40 Beds and a large Out-patient Department; duties to commence as soon as possible. The appointment is for six months. Salary at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

HENRY M. STANLEY, House Governor and Secretary.

Bedford County Hospital.

Applications are invited from registered Medical Practitioners, Male and Female, for the appointment of a FIRST HOUSE SURGEON (B2) to become vacant on August 8th, including R Practitioners within six months of qualification. Appointment for a period of six months. Salary £155 per annum, with full residential emoluments.

Application, stating age, qualifications with dates, and nationality, together with three recent testimonials, to be sent to the Secretary, Hon. Medical Staff Committee, as soon as possible.

Sussex Eye Hospital, Eastern Road,

BRIGHTON. (48 Beds.)

Applications are invited from Registered Medical Practitioners (Male or Female) for the appointment of a HOUSE SURGEON (B2) vacancy immediately. Salary is at the rate of £150 per annum with full residential emoluments. If held by an R Practitioner the appointment is limited to six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned.

PERCY F. SPOONER, Assistant Secretary.

General Hospital, Nottingham.

(389 Beds.)

Applications are invited from registered Medical Practitioners (Male and Female) for the appointment of a HOUSE PHYSICIAN (A) for the above Hospital—duties to commence as soon as possible. The appointment is for six months. Salary at the rate of £200 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of testimonials, should be sent to the undersigned immediately.

HENRY M. STANLEY, House Governor and Secretary.

The Royal Alexandra Hospital for Sick

CHILDREN, BRIGHTON. (100 Beds.)

Applications are invited from registered Medical Practitioners (Male) for the appointment of a HOUSE PHYSICIAN (B2) to commence duties immediately. Salary is at the rate of £150 per annum with full residential emoluments. The Hospital is recognised for the D.C.H. Diploma and the M.D. Examination, Branch 1.

Also for HOUSE SURGEON (A) to commence duties at the end of August. Salary is at the rate of £150 per annum, with full residential emoluments. Appointments, if held by R Practitioners, will be limited to six months.

Applications, stating age, qualifications with dates and nationality, and accompanied by copies of recent testimonials, should be sent to the undersigned.

22nd July, 1940. PERCY F. SPOONER, Secretary.

King George's Sanatorium for Sailors,

LIPHOOK, HANTS (Seamen's Hospital Society)
(For the Treatment of Pulmonary and Non-Pulmonary Tuberculosis).

ASSISTANT MEDICAL OFFICER (B2) required as from the 1st September, 1940, for six months. Salary in the first instance at the rate of £200 per annum, with board and residence.

Applications, with copies of not less than three testimonials, to be sent in immediately to the undersigned.

F. A. LYON, Secretary.

Seamen's Hospital Society, Greenwich, S.E.10.

Northamptonshire County Council.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER AND DISTRICT MEDICAL OFFICER OF HEALTH.

Applications are invited from registered Medical Practitioners holding a diploma in public health or similar qualification for the appointment of Assistant County Medical Officer of Health under the above County Council and District Medical Officer for the Urban Districts of Burton Latimer, Corby, Desborough, and Rothwell, and the Rural District of Kettering.

The inclusive salary will be at the rate of £800 per annum, with a travelling allowance on the scale from time to time approved by the County Council. Office accommodation and clerical assistance will be provided.

The appointment is subject to the Local Government Superannuation Acts, 1937 and 1939, and the successful candidate will be required to pass a medical examination.

The officer appointed will act under the County Medical Officer of Health as Assistant School Medical Officer and Assistant Medical Officer for Maternity and Child Welfare, and perform such other duties as may be assigned to him by the County Council and County Medical Officer of Health.

The appointment will be subject to the Sanitary Officers (Outside London) Regulations, 1935, and the Local Government Act, 1933, and the officer appointed will be required to perform in the districts of the Local Sanitary Authorities referred to all the duties imposed on a District Medical Officer of Health by the relevant Acts, Orders, and Regulations.

The officer will be required to devote his whole time to the duties of the office and to reside in a place approved by the Authorities.

The appointment will be determinable (subject to the relevant provisions of the Local Government Act, 1933) upon three months' notice on either side.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, should reach the undersigned not later than the 14th August, 1940.

Canvassing will disqualify.

J. ALAN TURNER, Clerk of the County Council.

County Hall, Northampton, 23rd July, 1940.

Copthorne and Shelton Emergency

HOSPITAL, SHREWSBURY. (680 Beds.)

APPOINTMENT OF RESIDENT SURGICAL OFFICER (B1).

Applications are invited from registered Medical Practitioners for the appointment of Resident Surgical Officer. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Suitably qualified R Practitioners holding B2 or B1 appointments are invited to apply. Salary is at the rate of £550 per annum, with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent not later than the 9th August to the Medical Superintendent, Salop Mental Hospital, Shrewsbury.

City of Bradford.

MUNICIPAL GENERAL HOSPITALS.

Applications are invited from registered Medical Practitioners including R Practitioners within six months of qualification, for the posts of HOUSE PHYSICIANS and HOUSE SURGEONS.

The appointments are A Posts and limited to a period of six months.

Salary £150 per annum, plus board-residence.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned not later than the 3rd August, 1940.

N. L. FLEMING, Town Clerk.

Town Hall, Bradford, 19th July, 1940.

County Borough of Newport.

PUBLIC ASSISTANCE COMMITTEE.

TEMPORARY SENIOR HOUSE SURGEON (B1).

Applications are invited from registered Medical Practitioners (Male) for the above appointment under the Emergency Hospital Scheme at Wooloston House Emergency Hospital (A1 Casualty Hospital). Suitably qualified R Practitioners holding B2 or B1 appointments are invited to apply. Salary £350 per annum, plus the usual residential emoluments. All fees with the exception of Coroner's Fees are payable to the Public Assistance Committee. Appointment terminable by 1 month's notice on either side.

Applications, stating age, qualifications and experience and accompanied by copies of three recent testimonials to be sent to the Public Assistance Officer, Town Hall, Newport, at once.

S. M. T. BURPITT, Town Clerk.

Town Hall, Newport, Mon, July, 1940.

Birmingham and Midland Eye Hospital,

BIRMINGHAM, 3.

Applications are invited for the post of SURGICAL REGISTRAR B1 to the Hospital.

Candidates must have had not less than two years' experience in Ophthalmic work, and should have held a resident post in an Ophthalmic Hospital for at least one year.

Appointment will be for one year with eligibility for re-appointment.

Salary at the rate of £200 per annum, plus £50 per annum for attendances at the Branch Hospital.

Particulars of duties, &c., may be obtained on application. Applications, together with copies of testimonials, to be sent in not later than Wednesday, 7th August, 1940, addressed to the House Governor. F. M. HAUGHTON, House Governor.

Northampton General Hospital.

(381 Beds.)

Applications are invited from registered Medical Practitioners (Male) and R Practitioners within six months of qualification for the following A appointments :—

(1) CASUALTY OFFICER.

(2) HOUSE SURGEON.

If held by R Practitioners, appointments will be limited to six months. Salary is at the rate of £150 per annum, with board, residence, and laundry. Candidates must be of British nationality.

Applications, stating age, qualifications, and dates, with copies of three testimonials, should be sent to the undersigned as soon as possible.

22nd July, 1940. GORDON S. STURTRIDGE, M.B., B.S.

Borough of Swindon.

APPOINTMENT OF DEPUTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from duly qualified Medical Practitioners for the whole-time appointment of Deputy Medical Officer of Health and Assistant School Medical Officer to the Borough of Swindon at an inclusive salary of £600 per annum, rising by four annual increments of £25 to £700.

Intending applicants must possess the Diploma in Public Health or an equivalent qualification.

The appointment will be terminable by three months' notice on either side.

Form of application and conditions of appointment may be obtained on application to the undersigned.

Applications, accompanied by copies of not more than three recent testimonials, must be forwarded in an envelope endorsed "Deputy Medical Officer of Health," to reach me not later than the first post on Wednesday, the 14th August, 1940.

D. MURRAY JOHN, Town Clerk.

Civic Offices, Swindon, 19th July, 1940.

Manchester Northern Hospital

(General Hospital—113 Beds),
Cheetham Hill-road, MANCHESTER, 8.

Applications are invited from registered Medical Practitioners, Male and Female, for the appointment of RESIDENT HOUSE SURGEON (A) to become vacant on 15th August, 1940. The appointment will be limited to five months. Salary is at the rate of £100 per annum.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned immediately.

JAMES C. DANIELS, Secretary.

38, Barton-arcade, Manchester, 3.

County Borough of Dewsbury.

DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from qualified and registered Medical Practitioners for the post of Deputy Medical Officer of Health. Experience in Infectious Diseases and Tuberculosis is essential.

The salary is £650 per annum, rising by £25 to £700, and a car allowance of £50 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers' Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Particulars of the duties, and terms and conditions of the appointment, together with application forms, may be obtained from Dr. J. F. Galloway, Medical Officer of Health, Municipal Buildings, Halifax-road, Dewsbury, to whom applications, accompanied by copies of not more than three recent testimonials, should be delivered not later than Monday, 12th August, 1940.

Canvassing in any form will be a disqualification.

HOLLAND BOOTH, Town Clerk.

Town Hall, Dewsbury, 20th July, 1940.

Dewsbury and District General

INFIRMARY, DEWSBURY. (100 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (A) (Male) vacant on August 15th next, including R Practitioners within six months of qualification. If held by an R Practitioner, appointment will be limited to six months. Salary £150 per annum, with emoluments. The duties are principally those of a House Physician and Casualty Officer.

The Infirmary is a modern Voluntary Hospital and has the usual Special Departments, with Visiting Consulting Specialists in attendance.

Applications, stating age, qualifications with dates, and nationality, together with copies of recent testimonials, to be addressed to my office without delay.

FRED SMITH, Secretary-Superintendent.

Swansea General and Eye Hospital.

(337 Beds.)

Applications are invited for the following posts :—

(1) HOUSE SURGEON to the AURAL and OPHTHALMIC DEPARTMENTS (B2). Salary at the rate of £200 per annum, with full residential emoluments.

(2) HOUSE SURGEON (A). Salary at the rate of £150 per annum, with ful lresidential emoluments. Appointments if held by R Practitioners will be limited to six months.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary-Superintendent.

County Mental Hospital, Lancaster.

Applications are invited from registered Medical Practitioners (Female) for the post of ASSISTANT MEDICAL OFFICER (B1). Candidates must be single and under thirty-five years of age. Commencing salary £550 per annum, rising to £600 after one year's satisfactory service, with further increases on promotion, subject to a deduction of 3 per cent. under the Asylums Officers' Superannuation Act, 1909. There are no emoluments. The selected candidate will be required to live in the Hospital, and she will be provided with board, lodging, &c., for which a charge of £150 a year is made. The possession of a Diploma in Psychological Medicine will entitle the Officer to an additional £50 per annum.

Applications, stating age, qualifications with dates, nationality, and present post, and accompanied by copies of three recent testimonials, should be sent to the Medical Superintendent not later than August 2nd, 1940.

Addenbrooke's Hospital, Cambridge.

APPOINTMENT OF A HOUSE SURGEON (A).

Applications are invited from registered Medical Practitioners, Male and Female, for the appointment of a House Surgeon (A), to become vacant on September 1st, 1940, including R Practitioners within six months of qualification. The appointment will be for a period of six months. Salary is at the rate of £130 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned not later than August 7th, 1940.

J. A. BEARDSALL, Secretary-Superintendent.

The Royal Sheffield Infirmary and

HOSPITAL, THE ROYAL INFIRMARY, SHEFFIELD, 6. (476 Beds.)

Applications are invited from registered Medical Practitioners, Male and Female, for the following appointments:—

HOUSE SURGEON (A).

AURAL AND OPHTHALMIC HOUSE SURGEON (A), now vacant, including R Practitioners within six months of qualification. The appointments will be tenable for six months. Salary is at the rate of £80 per annum, with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of three recent testimonials, should be sent to the undersigned forthwith.

H. KINGSLEY PEARCE,
General Superintendent and Secretary.

20th July, 1940.

Royal Sheffield Infirmary and Hospital.

THE ROYAL INFIRMARY, SHEFFIELD, 6.
(476 Beds.)

Applications are invited from registered Medical Practitioners for the post of OPHTHALMIC CLINICAL ASSISTANT (B1) now vacant.

Applicants should have held house appointments and had surgical experience. Suitably qualified R Practitioners holding B2 or B1 appointments are invited to apply. Salary is at the rate of £300 per annum, non-resident.

Applications, stating age, nationality, qualifications with dates, experience, and details of previous appointments, and accompanied by copies of three recent testimonials, should be sent to the undersigned forthwith.

H. KINGSLEY PEARCE,
General Superintendent and Secretary.

The Royal Infirmary, Sheffield, 6, 20th July, 1940.

Hove General Hospital, Hove.

Applications are invited for the undermentioned appointments, both of which are for six months in the case of R Practitioners but would be extended in the case of non-R Practitioners. Applications, stating age, qualifications, &c., and accompanied by copies of testimonials, should reach the undersigned as soon as possible.

1. JUNIOR R.M.O. (A).

Applications invited from registered Medical Practitioners including R Practitioners within six months of qualification. The salary is at the rate of £120 per annum, with full residential emoluments.

2. SENIOR R.M.O. (B2).

Applications invited from registered Medical Practitioners, including R Practitioners who hold A Posts and who have not yet completed a five months' tenure of these posts. Salary at the rate of £150 per annum, with full residential emoluments.

R. A. KINGSNORTH, Acting Secretary.

County Borough of Rotherham.

THE MUNICIPAL GENERAL HOSPITAL.

TWO RESIDENT ASSISTANT MEDICAL OFFICERS.
(A Posts.)

Applications are invited from registered Medical Practitioners for the positions of Resident Assistant Medical Officers (A) now vacant, including R Practitioners within six months of qualification. If held by an R Practitioner, appointment will be limited to six months, otherwise it will be for a period of twelve months.

Salary is at the rate of £200 per annum, with full residential emoluments. A temporary cost-of-living bonus, amounting at present to 5 per cent. on the annual salary, has been granted by the Borough Council, and is subject to alteration or cancellation by the Council.

The persons appointed will be required to pass a medical examination and be required to contribute to the superannuation fund of the Corporation.

Application forms may be obtained from the Medical Superintendent, Municipal General Hospital, Rotherham, and must be returned to the undersigned, endorsed "Resident Assistant Medical Officer," on or before the 6th August, 1940.

CHAS. L. DES FORGES, Town Clerk.

County Borough of South Shields.

ASSISTANT SCHOOL MEDICAL OFFICER
(TEMPORARY).

Applications are invited from fully qualified and registered Women Medical Practitioners for the post of Assistant School Medical Officer (Temporary) at a salary of £500 per annum, rising by annual increments of £25 to £700 per annum.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

The person appointed will be under the administrative control of the Medical Officer of Health and she must devote her whole time to the duties of the post and must not engage in private practice.

Forms of application may be obtained from the Medical Officer of Health, Stanhope-road, South Shields.

Applications, with copies of three recent testimonials, should be received at my office not later than NOON on Wednesday, the 7th August, 1940, marked "Appointment of Assistant School Medical Officer (Temporary)."

V. C. CARTER, Education Secretary.

Education Department, Town Hall, South Shields,
16th July, 1940.

Berkshire County Council.

TEMPORARY ASSISTANT MEDICAL OFFICER FOR A.R.P. CASUALTY SERVICES.

Applications are invited from duly qualified Medical Practitioners (Male) for the appointment of an Assistant Medical Officer at a salary of £500 per annum, rising by annual increments of £25 to £700 per annum, and travelling expenses according to the County scale.

The duties of the appointment will be to assist in the training and supervision of the A.R.P. personnel, supervision of First-aid Posts and equipment, also to assist in the Emergency Hospital Scheme and to carry out such duties as the County Medical Officer may direct. The appointment will be terminable at any time by one month's notice on either side.

Forms of application may be obtained from the undersigned and should be returned, together with copies of testimonials, by the first post on Wednesday, 7th August, 1940.

H. J. C. NEOBARD, Clerk of the Council.

Shire Hall, Reading, 17th July, 1940.

The Royal Liverpool Children's

HOSPITAL.

APPOINTMENT OF A RESIDENT SURGICAL OFFICER (A)

Applications are invited from registered Medical Practitioners, for the above appointment at the Heswall (Country) Branch (240 beds), vacant on 1st October, 1940. Salary at the rate of £120 per annum.

The appointment will be for the three months ending 31st December, 1940. At the end of that time the holder of the post will be eligible to apply for re-election for a further six months. If held by an R Practitioner the appointment will be limited to six months.

Applications, stating age, qualifications with dates and nationality, accompanied by copies of three recent testimonials, and the name of a referee, should be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, 7, by Wednesday, 7th August, 1940.

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Royal Victoria Hospital, Dover.

(80 Beds.)

Wanted on or before the 22nd August RESIDENT MEDICAL OFFICER (Male) recently qualified and registered, preferably with some experience (B2). If held by an R Practitioner appointment will be limited to six months. Salary £180 per annum, with board, lodging, and laundry.

Applications, stating age, with particulars of experience, accompanied by copies of three recent testimonials, should be sent to the Secretary as soon as possible.

Manchester Northern Hospital.

(General—113 Beds.)

The Committee of Management invite applications from qualified Medical Practitioners for the post of MEDICAL REGISTRAR to the OUT-PATIENT CHILDREN'S CLINIC. Duties will consist of attending the Honorary Medical Staff on two mornings each week, at a fee of 10s. 6d. per session.

Applications to be sent to the Secretary, Mr. J. C. DANIELS, 38, Barton-arcade, Manchester, 3, as soon as possible.

The Royal Liverpool Children's

HOSPITAL, MYRTLE STREET, LIVERPOOL, 7.

The Committee invite applications for the posts of:—

SURGICAL REGISTRAR B1 for 12 months from August, 1940.

MEDICAL REGISTRAR B1 for 10 months from 1st October, 1940.

Salary in each case at the rate of £125 per annum.

Further particulars may be obtained from the Secretary of the Hospital, to whom applications should be sent, with copies of recent testimonials, by first post on Saturday, 3rd August, 1940.

The Royal Liverpool Children's

HOSPITAL, MYRTLE STREET, LIVERPOOL, 7.

APPOINTMENT OF RESIDENT CASUALTY OFFICER (B.2)

Applications are invited from registered Medical Practitioners (Male) for the above post, vacant on 1st October, 1940. Salary at the rate of £250 per annum.

The appointment will be for the period ending 31st December, 1940. At the end of that time the holder will be eligible to apply for re-election for a further six months. If held by an R Practitioner the appointment will be limited to six months.

Applications, stating age, qualifications with dates and nationality, and accompanied by copies of three recent testimonials, and the name of a referee, should be sent to the Secretary of the Hospital by Wednesday, 7th August, 1940.

The Royal Liverpool Children's

HOSPITAL, MYRTLE STREET, LIVERPOOL, 7.

APPOINTMENT OF HOUSE PHYSICIANS AND HOUSE SURGEONS (A)

Applications are invited from registered Medical Practitioners, Male and Female, for the above posts, vacant on 1st October, 1940. Salary in each case at the rate of £100 per annum.

The appointments will be for the period ending 31st December, 1940. At the end of that time holders will be eligible to apply for re-election for a further six months. If held by R Practitioners the appointments will be limited to six months.

Applications, stating age, qualifications with dates and nationality, and accompanied by copies of three recent testimonials, and the name of a referee, should be sent to the Secretary of the Hospital by Wednesday, 7th August, 1940.

Saint Mary's Hospitals, Manchester.

Applications are invited for the post of RESIDENT SURGICAL OFFICER (B1 post) to be responsible for the work of the OBSTETRICAL, GYNÆCOLOGICAL, and CHILDREN'S DEPARTMENTS of this Hospital. The post will be for a minimum period of one year, with a salary at the rate of £250 per annum, with board and residence.

Membership of the Royal College of Obstetricians and Gynæcologists would be an advantage.

Applications, with copies of three testimonials, to be sent to the undersigned immediately.

A. R. WISE, Superintendent and Secretary.

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Nurse in safe area for man, aged 70, with permanent suprapubic. Will pay £100 per annum, to include board and necessary attention. Advertiser reduced circumstances.—Write Box 671, 8, Serle-street, W.C.2.

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